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TRANSACTIONS

OF THE

MEDICAL ASSOCIATION

OF

GEORGIA

FIFTY-FOURTH ANNUAL SESSION

1903

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"RESOLVED, That this Association shall not be considered as indorsing views of authors of papers published in connection with the Transactions, unless definitely so indorsed in the Proceedings of the Association.

"RESOLVED, That the above resolution appear annually upon the title-page of our published Proceedings."

Transactions 1873.

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MINUTES

OF THE

Medical Association of Georgia.

Fifty-Fourth Annual Session.

FIRST DAY—MORNING SESSION.

COLUMBUS, GA., April 15, 1903.

The Association met in the court-house at Columbus, Ga., and was called to order by the President, Dr. Charles Hicks, of Dublin.

Prayer was offered by the Rev. Dr. Wray, of Columbus, after which the address of welcome in behalf of the city of Columbus was delivered by Mayor Chappell, as follows:

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the Convention:

Twelve months ago the honored president of our board of health attended your convention in a neighboring city, and upon his return gave to his fellow-citizens of Columbus an enthusiastic account of that pleasant and profitable occasion. While he grew eloquent in describing many diverting and delightful episodes, it has been strongly suspected that he reserved even the recollection of others for

strictly individual use, to cheer and soothe and palliate the effects of the trials and exactions of daily professional practice.

But among the messages he brought to the citizens of Columbus the one which pleased them most was your promise that your next convention should be held in this city, and to-day we are charmed to see the fulfillment of this promise by the presence among us of so many representatives of the profession which has done so much and is ever striving to do more, not as I view it, to prolong human life, but by measures of prevention and cure, of hygiene and sanitation, to minimize the tendency to disease and enable man to make the most of the number of years allotted to him by his Maker.

My individual knowledge of members of your profession has been almost entirely of a personal rather than a professional nature. On one of the rare occasions upon which I sought medical advice my eyes were causing me great annoyance and much pain. In entering the office of an eminent specialist the thought entered my mind, that young men who wore rimless glasses had a *distingué* appearance, and were not, after all, to be greatly commiserated on account of defective vision. The man of science examined my eyes and my tongue, and after asking a lot of questions which seemed wholly irrelevant, told me to take five grains of calomel and a dose of salts. I was disheartened and humiliated, but I followed his advice, and have not yet attained the distinction of rimless glasses.

We hope that this convention, by the interchange of thought and the attrition of mind against mind will encourage research amid the secrets of nature and science, and be productive of much good. To a member of your profession, a citizen of Georgia, has been assigned a position in the hall of statuary at our nation's capital on account of his discovery of anesthesia. The marvelous

properties of certain drugs, which have existed since the beginning of the world, have only been discovered and utilized during the past fifty years, opening new fields of surgery and relieving mankind of untold suffering and affliction.

We hope that our citizens generally will be permitted to attend your meetings and gain a breadth of knowledge upon municipal, household and personal hygiene and sanitation.

We assure you of a hearty and a cordial welcome to all that Columbus have to offer. We esteem it an honor, as well as a pleasure, to have you as our guests, and when you disperse to your homes in various sections of Georgia we hope you will carry with you pleasant and lasting memories of your brief stay among our people in the city nestled upon the banks of the Chattahoochee.

Dr. A. M. Anderson, of Columbus, delivered the address of welcome in behalf of the Medical Profession of Columbus, as follows:

Mr. President and Gentlemen of the Medical Association:

Columbus is neither a city that is set upon a hill, nor is she "The Lily of the Valley," therefore you must not expect our light to shine so bright as to dazzle you, nor our fragrance to be sweet as the perfume of roses, but such as we are we most cordially receive you, and to such as we have you are most heartily welcome.

A short time since a society matron in a neighboring city was invited out to luncheon, and as her little six-year-old boy had been unusually obedient that day she decided to reward him by permitting him to go with her. After cautioning him and telling him not to talk too much, and that he must be a good little boy, they proceeded to the place of entertainment. While luncheon was being served Johnnie sat perfectly quiet, devouring everything that came in sight. After everything was over the hostess,

wishing to be pleasant to the little fellow, walked over and placing her hand upon his head, said: "Johnnie, won't you have something else?" whereupon the little fellow calmly replied, "No, thanks, I have plenty, such as it is." So, gentlemen, I hope when you have been with us and are ready to depart, you may be able to say, like little Johnnie, that you have plenty, such as it is.

I shall not be governed in what I have to say this morning by any precedent that may have been established upon occasions of this kind, for I do not wish to welcome you among us in mere words, which are only the hollow symbols of reality, but rather I trust that you may be able to feel and see, rather than hear, that you are indeed welcome.

I might call to your mind this morning the wonderful strides that have been made in recent years in connection with the great science of medicine and surgery, and paint in glowing pictures the still more wonderful things that may be expected to develop along these lines in the near future.

Again, I might review the great accomplishments of this Association from the year 1849 down to the present session, and tell you of the benefit and pleasure that is to be derived from our meeting together, but we have only to refer to the proper literature upon these various topics in order to acquaint ourselves with all these facts; therefore, I shall not impose upon you the task of listening to history, statistics, dates and descriptions, but rather I shall strive to impress upon every one within the sound of my voice the all-important fact that the medical profession is second to none upon the civilized globe to-day, and that the opportunities for good have never been greater than those enjoyed by the physicians of to-day.

It is said that a noted divine was once asked by his son what course to pursue in order to result in the most good,

o humanity, and the preacher readily replied: Why, study medicine.

If the practice of medicine, then, stands so high among the pursuits of life, the responsibilities resting upon those who make this their chosen profession, their lifetime work, are necessarily great in proportion; but how many of us are there who realize that to say we have done our best is not all that may be requested of us?

No man has discharged his duty unless he has so thoroughly familiarized himself with the case in question that, when it is terminated, he can conscientiously say: "I have done all that could possibly have been done by any one under the same circumstances that have attended me.

Don't understand me to say that the ideal doctor is he who practices for the love of humanity and ignores the almighty dollar, for, if this were true, then I would challenge the world to show me an ideal physician.

Your patrons expect you to give them honest service, and in order to do this you must receive honest pay for what you do. "Is not the laborer worthy of his hire?"

The first object, then, is to do all that lies within your power to benefit your patient in every possible way; then, if he is able to pay, make him do so, and well (if you can). If he is not able to pay, then a clear conscience is a compensation not always received, but one which oftentimes is more to be desired than mere dollars and cents.

There has always been, and will ever be, those men in the profession who enter the work and remain in it for the loaves and fishes, those who will cast ethics to the winds and disregard the feeling of their fellow practitioners if it will only add an extra dollar to their coffers; and these are the men who bring discredit and reproach to the entire profession, and well do they merit the condemnation of every man who is true to the age. These are the wolves in sheep's clothing, and so long as the good doctors and

the laws of the land allow them to remain so we may expect to suffer therefor. God grant that the day may soon come when these rascals will be branded by the whole world as the scoundrels and knaves they really are and unworthy of the respect of decent citizens.

Glad indeed are we that there are so few of this class of so-called doctors, and that the representative physicians of the land are among the greatest heroes the world has ever known. I have stood on the ocean's edge on a summer's night while all the world was hushed in silence, and watched the great satellite of the earth as she slowly ascended into the heavens, and, while the calm and placid waters lay shimmering in her silvery beams and the balmy breezes were wafted to me from far across the mighty deep, I have thought how beautiful and grand.

I have sat quietly hour after hour and listened to the gray-haired veteran of many battles as he has told how men have stood in line and faced the deadly bullets of the enemy's gun, never quavering, never fearing, while thousands of their comrades were being hurled into the unknown world beyond, and have thought how heroic and grand.

I have stood upon the loftiest peak of a mountain chain and watched the goddess of night, as with outstretched wings she hovered over the world, and from thence a little later I have seen the mighty ruler of the day as he slowly mounted the eastern skies, and driving the goddess of night onward upon her fleeting ways to the Pacific, chasing Aurora herself from every nook and cranny of the vast mountain chain, caused the dewdrops upon the grassy plains below to sparkle into myriads of diamonds. Then, hypnotized, as it were, by nature's grand resplendent beauty, I watched the mists upon the lowlands as, acted upon by the mighty rays of the sun, they passed through all the varying spectroscopic colors of the rainbow, and finally

ascended to the heavens from whence they came, and I thought that was grand.

I have watched the starlit skies at midnight, and have seen the dark and threatening clouds slowly envelop the world in a mantle of total darkness, and while every one was hushed in trembling fear and the thunders boomed and roared like a cannon in battle, and just as the terrible cyclone burst upon us and swept the land with death and destruction, I have seen the mighty electric coiled serpent of God shoot athwart the storm-swept skies and cause the world to brighten into a noonday's splendor, and I knew that was grand.

But the grandest thing in all the world, the greatest battle that was ever fought, the noblest heroes that ever lived or died, are all embodied in that battle that is constantly being fought, and is never ended, between the Pathogenians on the one side and the Æsculapians on the other, where the boon of contention is a human life.

The response to the address of welcome was delivered by Dr. S. C. Benedict, of Athens, who spoke as follows:

But a few hours ago did I know that the pleasure of replying to your generous welcome in behalf of this Medical Association of Georgia would devolve upon me, but though my words will barely suggest to you the willing thankfulness we feel in being welcomed among you I must not refrain. Year by year, as each has come, this Association has met in the different sister cities of our State, and now again, after fifty-four years have been added to the age, we are once more among you. To many of us this is our first introduction, but we all know your town and its people from what you have accomplished by your energy and business ability, until now, as she steadily increases her population and her resources, we feel as though we would love to know you again. This is my first visit here; handle

this one gently, for he knows many of your people and has seen growing into beautiful womanhood many of your charming women, and not a few of your sturdy men of business would make me happy with another hand-shake.

You have a beautiful town, and the music of your clocks to me in my slumbering wakefulness of last night suggested forcefully the chimes of my boyhood days in another city of this State.

We wish to know more of you, and while we are here for mutual help in our life's work, we wish to slight none of the opportunities for recreation you offer us. We are tender plants and need careful tending; we assure you that we can survive entirely upon food and drink as other plants do, and we beg of you not to poison us. Handle us easily, and we will go away blessing you and ready to spread abroad your promises; handle us less tenderly, and we may forget to speak of many things we have known here, but if you treat us roughly, we may awake at our homes with nothing to remind us of what has been nothing more than an eddy in the current of our thoughts. Thank you, gentlemen, for your welcome. We accept it, and hope we may so behave ourselves that we shall be asked to come again.

The President called for the report of the Committee of Arrangements, and in the absence of the Chairman, Dr. Grimes, the report of this committee was read by Dr. J. H. McDuffie, as follows:

REPORT OF THE COMMITTEE OF ARRANGEMENTS.

To the President and Members of the Medical Association of Georgia:

GENTLEMEN:—It is the pleasure of your Committee of Arrangements to report as follows: The sessions of the Association will be held in the superior court room of the court-house. The jury room on the right of the President's chair has been set apart for the use of the Board of Censors, and the one on the left for the other committees. Ample space has been provided in the

obby just outside the entrance of this room for all medical and surgical exhibits. Badges will be supplied to all upon application to the Secretary. Visiting physicians will wear blue badges, local physicians white ones, and the members of the Committee of Arrangements red ones.

The following plan for social entertainment of the Association by the local physicians is respectfully submitted:

This (Wednesday) evening at 9 o'clock a "Bohemian Smoker" at the Hotel Racine.

Thursday evening at 9 o'clock a banquet at the Hotel Rankin.

Friday evening a boat-ride on the Chattahoochee river, to which function the wives and daughters of physicians are most cordially invited.

Respectfully submitted,

G. J. GRIMES, Chairman.

The report of the Committee of Arrangements was adopted.

Dr. T. V. Hubbard, as Chairman of the Program Committee, presented the following program:

WEDNESDAY, APRIL 15.

MORNING OF THE FIRST DAY.

1. "Post-operative Treatment of Six Cases of the Appendix, with some Observations on the use of Large Doses of Strychnin for Ileus."
   DR. R. M. HARBIN, Rome.
2. "The Sin of So-called Conservative Medical Treatment in Conditions demanding prompt Surgical Intervention."
   DR. FLOYD W. MCRAE, Atlanta.
3. "Hydrotherapy in Diseases of the Digestive System."
   DR. J. C. JOHNSON, Atlanta.
4. "The Importance of the Ophthalmoscope in Recognizing some Diseased Conditions of the Body."
   DR. S. LATIMER PHILLIPS, Savannah.
5. "The Use of the Nasal Drill in removing Obstructions."
   DR. GEORGE BROWN, Atlanta.
6. "Some Observations in 1400 Cataract Operations."
   DR. A. W. CALHOUN, Atlanta.
7. "Combined Ethyl Chloride and Ether Anesthesia."
   DR. WM. PERRIN NICOLSON, Atlanta.

AFTERNOON OF THE FIRST DAY.

8. "Retinitis Albuminurica."
DR. T. H. MITCHELL, Columbus.

9. "Treatment of Ectopic Gestation."
DR. JAMES N. ELLIS, Atlanta.

10. "Treatment of Carcinoma of the Cervix."
DR. V. O. HARDON, Atlanta.

11. "The Injection of Oxygen or Atmospheric Air into the Cavities or Tissues of the Body as a Therapeutic Agent."
DR. EUGENE R. CORSON, Savannah.

12. "Abdominal Surgery in the Private Residence."
DR. M. F. CARSON, Griffin.

13. "Summer Complaints of Children."
DR. S. A. VISANSKA, Atlanta

14. "Treatment of Acute Suppuration of the Middle Ear."
DR. W. E. CAMPBELL, Atlanta.

15. "Puerperal Insanity."
DR. J. W. PALMER, Ailey.

16. "Smallpox and its Satellites."
DR. F. M. BRANTLEY, Senoia.

17. "Osteomyelitis."
DR. HOWARD J. WILLIAMS, Macon.

18. "A Plea for Conservative Prognosis in Kidney Trouble."
DR. CLAUDE A. SMITH, Atlanta.

THURSDAY, APRIL 16.

MORNING OF THE SECOND DAY.

19. "Urethral Stricture."
DR. W. L. CHAMPION, Atlanta.

20. "Surgical Infections and their Treatment."
DR. W. F. WESTMORELAND, Atlanta.

21. "Hemophilia."
DR. CHARLES HICKS, Dublin.

22. "A Study of a Case of Spinal Curvature; New Investigations of the Mechanics of Severe Scoliosis; Preliminary Report on a New Operation."
DR. MICHAEL HOKE, Atlanta.

23. "The Pathology and Treatment of some of the Affections of the Upper Air Tract."
DR. J. M. CRAWFORD, Atlanta.

24. "Remarks on the Cause and Treatment of Deaf-mutism."
DR. ROSS P. COX, Rome.

25. "Conservative Operations in Gynecologic Practice."
DR. E. C. DAVIS, Atlanta.

26. "The Management of Internal Strabismus."
DR. DUNBAR ROY, Atlanta.

27. "Some Indications for the Use of the Saline Solution."
DR. J. B. MORGAN, Augusta.

28. "Some Observations on 1200 Abdominal Sections"
DR. GEORGE H. NOBLE, Atlanta.

12 O'CLOCK NOON—SECOND DAY.

29. "Acute Suppuration of the Larger Joints and their Modern Treatment."
DR. ARPAD G. GERSTER, New York.

30. "Report of Cases of Large Multiple Fibroid Tumor; Operation Caesarean Section; Living Child, with Photographs of same."
DR. T. E. DREWRY, Griffin.

31. "Our House and our Servant."
DR. HENRY MCHATTON, Macon.

32. "Reminiscences of forty-five years' use of the Galvanic Current in Obstetrics and Gynecology; without Noise, without Sparks, without Rays, or Suggestions."
DR. J. C. LEHARDY, Savannah.

33. "Aseptic and Antiseptic Obstetrics in the Prevention of Pelvic Diseases in the Female."
DR. R. R. KIME, Atlanta.

34. "An Operation for Permanent and Quick Cure of Hemorrhoids, almost Bloodless and Painless."
DR. J. C. MCAFEE, Macon.

35. "Some of the General Diseases and their Relations to the Eye."
DR. J. LAWTON HIERS, Savannah.

36. "Antiseptic Inhalation Treatment of Phthisis."
DR. M. M. SALIBA, Savannah.

37. "Technique of Dressing after both Minor and Major Operations."
DR. A. L. FOWLER, Atlanta.

38. "Some Cases of Interest in an Eye and Ear Practice."
DR. J. H. SHORTER, Macon.

39. "Some Interesting Cases of Abdominal Hysterectomy."
DR. W. S. ELKIN, Atlanta.

40. "Spinal Curvature."
DR. THEO. TOEPEL, Atlanta.
41. "Deafness, Its Prevention and Cure."
DR. M. M. STAPLER, Macon.
42. "Report of Some Surgical Cases."
DR. C. D. HURT, Atlanta.

FRIDAY, APRIL 17.

MORNING OF THE THIRD DAY.

43. "Gastroptosis."
DR. J. N. LECONTE, Atlanta.
44. "Some of the Uses of Silver in Mucous Membranes in its Modified Forms of Protargol, Argonin and Albargin."
DR. ARTHUR G. HOBBS, Atlanta.
45. "A Nephrectomy," with Remarks."
DR. J. G. EARNEST, Atlanta.
46. "The Vaginal Route in Gynecology."
DR. G. R. WHITE, Savannah.
47. "Unilateral Sweating."
DR. E. BATES BLOCK, Atlanta.
48. "What is meant by 'Regular' in the Code of Ethics."
DR. L. G. HARDMAN, Harmony Grove.
49. "Remarks on X-Ray Treatment of Cancer."
DR. M. B. HUTCHINS, Atlanta.
50. "X-Ray Treatment of Acne."
DR. HENRY R. SLACK, LaGrange.
51. "The X-Ray Treatment of Locomotor Ataxia, with Clinical Results."
DR. JOHN W. DANIEL, Savannah.
52. "Criminal Kindness."
DR. RALPH M. THOMSON, Savannah.
53. "The Early Treatment of Insanity."
DR. M. L. PERRY, Milledgeville.
54. "Uncinariasis; Its Importance and Frequency in the Southern States."
DR. H. F. HARRIS, Atlanta.
55. "Remote Effects of Latent Gonorrhea in the Female."
DR. W. E. FITCH, Savannah.
56. "Some Affections of the Head of General Interest."
DR. A. W. STIRLING, Atlanta.

AFTERNOON OF THE THIRD DAY.

57. "A Few Valuable Points on the Treatment of Urethritis—Orchitis and Bubo."
DR. L. AMSTER, Atlanta.

58. "Remote Influence of Human Action."
DR. N. B. DREWRY, Griffin.

59. "An Unclassified Fever of the South."
DR. E. C. THRASH, Oakland.

60. "Colic in Infants."
DR. MARION McH. HULL, Atlanta.

61. "Antiseptic and Eliminative Treatment of Typhoid Fever."
DR. T. V. HUBBARD, Atlanta.

The President called for the report of the Committee on Publication, and the Secretary reported that the Chairman of this committee was sick and unable to be present, but that the committee presented the Transactions, which spoke for itself.

During the year the following members have died:

B. R. Doster, Blakely, Ga.; Eugene Foster, Augusta, Ga.; A. M. F. Hawkins, Ball Ground, Ga.; S. J. Lanier, Mt. Airy, Ga.; G. P. Robinson, Atlanta, Ga.; J. N. West, Toccoa, Ga.; K. J. Yearwood, San Luis Potosi, Mexico.

Owing to the failure of the chairman of the Necrology Committee to either make a report or present memorials, the Secretary can only mention the death of such members as came to his attention. Had the Chairman of the committee not promised to furnish memorials, the Secretary would have endeavored to have gotten them himself.

The following short memorial of Dr. Foster is extracted from a memorial of him prepared by his associates on the Board of Trustees of the State Sanitarium:

IN MEMORIAM.

Eugene Foster, M.D., was born in Augusta, Ga., April 7, 1850. He died at his home in the same city January 23, 1903, in the fifty-third year of his age.

Deprived by death of his father's protection and guidance while yet in the tender years of childhood, Dr. Foster's rearing and education devolved upon his mother, Jane E. M. Foster, who survived her husband twenty-one years. She seems to have been eminently fitted by natural endowments, great energy of charac-

ter, and a highly cultivated mind for the grave responsibilities imposed upon her by divine providence.

After acquiring his academic education in the Academy of Gen. Capers in Augusta, Ga., Dr. Foster began the study of medicine in the office of his older brother, Dr. W. H. Foster, in 1869. Later he entered the medical department of the State University in Augusta, from which famous school of medicine he graduated in March, 1872. The same year he took a post-graduate course in the University Medical College, New York City.

Having thus completed his professional studies, he returned to his native city and entered upon the practice of medicine among the people who had known him from his infancy. Here he was brought into competition with some of the ablest physicians and surgeons in the South—several of whom were recognized as authorities in their special departments. But so thorough had been his preparation, and with such diligence did he continue to pursue his studies—enlarged now to include original research and investigation—that he quickly established himself upon a firm footing in his profession, and laid the foundation for a practice limited only by the time and labor he was willing to surrender to its demands.

Eugene Foster was pre-eminently a physician. For this line of professional work he had a natural predilection; to it he gave the most assiduous labor of a strong, clear mind; in it he won enduring fame. He loved his profession, and he pursued it with a lover's passion and a student's concentration.

As the head of the health department of Augusta, his native city and his home during all his life, and as President of the Board of Trustees for the State Sanitarium, he found fields to which his talents and his sympathies were peculiarly adapted. In these positions of trust and responsibility his tireless activities, fine executive ability and genius for detail found ample scope. In each he performed his greatest labors and rendered his most valuable public service.

For fourteen consecutive years Dr. Foster was a member of the State Sanitarium Board of Trustees. Ten years of this time he served as secretary of the board, and for four years he filled the office of president of that body.

He joined the Medical Association in 1875, and was until his death ever active in its counsels and debates. He filled at different times the office of President, Vice-President and Censor. By his death the Association has lost one of her most valued members.

The President called for the report of the Committee on New Members, and Dr. W. F. Westmoreland, as Chairman

of this committee, stated that when the Association met last in Columbus it had a membership of 267, and at this meeting it had a membership of over 600. In regard to the detailed report, he stated that it was impossible to make a report at that time, as new members were coming in rapidly, and he requested that his committee be allowed to make their report on the last day when all the new members had been received.

This request was granted.

The Committee on Medical Legislation stated that they would be ready to make report on the morning of the second day.

As Chairman of Special Committee on Reorganization, Dr. McRae asked for more time, which was granted.

Dr. W. F. Westmoreland, as Chairman of the "Crawford W. Long Memorial Committee," requested that the hearing of report of this committee be postponed until he could get a full meeting of the committee.

This request was granted.

The reading of the report of the Secretary and Treasurer was postponed until the afternoon session.

The President appointed on the Auditing Committee the following members: Dr. V. O. Hardon, Chairman, Dr. Michael Hoke, and Dr. W. W. Owens.

The reading of papers was then taken up.

Dr. R. M. Harbin, of Rome, read a paper on "Post-operative Treatment of Six Cases of Abscess of the Appendix with some Observations on the use of Large Doses of Strychnin for Ileus."

Dr. F. W. McRae, of Atlanta, presented a paper on "The Sin of So-called Conservative Medical Treatment in Diseases Requiring Prompt Surgical Intervention," which was discussed by Drs. Nicolson, Westmoreland, Harbin, Morgan, Johnson, Elkin, Visanska, Duncan,

Carson, Hubbard, Taylor, Hicks, and Dr. McRae (in closing).

Dr. J. C. Johnson, of Atlanta, contributed a paper on "Hydrotherapy in the Diseases of the Digestive System." Discussed by Dr. Harbin.

Dr. R. M. Harbin introduced the following resolution, which was referred to Committee on Medical Legislation:

Resolved, That in the interest of the public health and a better study for the prevention of disease, the Medical Association of Georgia, through its Legislative Committee, urge the Georgia Legislature to enact laws for the registration of vital statistics as outlined in the joint resolution approved by the Senate and House of Representatives of the United States, February 11, 1903

Resolved, That the Medical Association of Georgia cooperate with the American Public Health Association and U. S. Census Office in efforts to extend the benefits of registration.

On motion, the Association adjourned until 2:30 p.m.

AFTERNOON SESSION—FIRST DAY.

The Association reassembled at 2:30 p.m. and was called to order by the President.

Dr. A. W. Calhoun, of Atlanta, read a paper on "Some Observations in 1400 Cataract Operations," which was discussed by Dr. Hiers, and Dr. Calhoun (in closing).

Dr. W. P. Nicolson, of Atlanta, presented a paper on "Combined Ethyl Chloride and Ether Anesthesia." This was discussed by Drs. Calhoun and Johnson, and Dr. Nicolson (in closing).

The Secretary and Treasurer, Dr. Louis H. Jones, presented the following report:

REPORT OF THE SECRETARY AND TREASURER.

Mr. President and Gentlemen of the Association:

At the present time the Association has 625 active members. During the past year 42 members have been dropped for non-payment of dues, according to the provision of the Constitution.

Last spring a written notice was sent to all delinquents; there were about 100 of these men upon the books of the former Treasurer. Of these quite a number paid up, but 42 did not, and were therefore dropped from the roll.

As far as I am aware six members have died since the last meeting. I saw notices of these in the daily papers, but have received no notice from the Chairman of the Committee on Necrology. I would be glad if members who know of deaths in their community would drop me a card.

Four members have removed from the State in the past year, and one member has resigned, making a total of 52 marked from the roll of the Association. The new members taken in at this meeting will increase the roll over seven hundred.

There are 64 members who have not paid their dues for 1901–2, and if they do not pay up I will have to notify them that they have been dropped from the roll. There are 84 members who have not paid their dues for 1902. This makes $636.00 which would be in the treasury if these members had paid up.

Members often change their post-office, but do not notify me. I would be glad if the members in moving from one town to another would notify me of the change in their address.

The financial condition of the Association is as follows:

Dr. *Louis H. Jones, Secretary and Treasurer.*

1902.			
April, 15	Balance in bank ....$	532 84	
	Dues collected April 15, 1902, to April 15, 1903..... ...	1,736 00—$	2,268 84
			$ 2,268 84

Report for year April 15, 1902, to April 15, 1903. *Cr.*

1902.			
April	23,	L. L. Hardin	$ 29 73
"	24,	J. P. Stevens	54 45
"	24,	Foote & Davies Co	3 65
June	17,	J. P. Stevens	15 00
"	23,	Foote & Davies Co.	79 11
"	27,	C. A. Smith..	100 00
July	10,	W. F. Westmoreland.	40 40
Aug.	23,	J. P. Stevens (C. W. Long, Mem. Com)	27 50
Sept.	11,	Franklin Printing & Publishing Co.	937 81
1903.			
Jan.	5,	Foote & Davies Co. (C.W. Long, Mem. Com.).	33 00
"	17,	Franklin Printing & Publishing Co.	11 44
April	8,	L. H. Jones (stamps for Dr. Hicks, letters).	20 00
"	13,	Louis H. Jones, (salary, Sec. & Treasurer.)..	300 00
"	14,	Stamps, postal cards, books, rubber stamps, exchange, etc.	44 14
			$ 1,696 23
"	15,	Balance in bank	572 61
			$ 2,268 84

The report of the Secretary and Treasurer was referred to the Auditing Committee.

Dr. T. H. Mitchell, of Columbus, read a paper on "Albuminuric Retinitis."

The Secretary read a telegram from Dr. J. N. Ellis, expressing his regret at not being able to be present.

Dr. V. O. Hardon, of Atlanta, presented a paper on "Treatment of Carcinoma of the Cervix."

Dr. M. F. Carson, of Griffin, contributed a paper on "Abdominal Surgery in the Private Residence."

Dr. S. A. Visanska, of Atlanta, read a paper on "Summer Complaints of Children," which was discussed by Drs. McHatton, Ross, Thrash, and Visanska (in closing).

Dr. J. W. Palmer, of Ailey, presented a paper on "Puerperal Insanity."

The Board of Censors presented the following report:

We, the Board of Censors, after careful consideration and thorough investigation, hereby recommend the following applicants as members of the Medical Association of Georgia:

Name.	Residence.
T. B. Bullard	Palmetto.
B. M. Kennon	McRae.
J. L. Frazier	McRae.
W. H. Boyd	Rome.
E. M. Green	Milledgeville.
H. E. Thornton	Hartwell.
J. M. Underwood	LaFayette.
A. A. Barge	Newnan.
E. P. Bomar	Ohoopee.
W. H Hendricks	Tifton.
Ralph Smith	Cartersville.
Craig Barrow	Savannah.
H. W. Hesse	Savannah.
T. S. Clay	Savannah.
G. W. Heriot	Savannah.
J. F. Chisholm	Savannah.
J. G. VanMartin	Savannah.
J. S. Hawkins	Savannah.

J. Weichselbaum ..... Savannah.
B. F. Oliveros ..... Savannah.
T. P. Waring ..... Savannah.
T. J. Charlton ..... Savannah.
Wm. B. Orear ..... Savannah.
R. S. Reid ..... Savannah.
M. F. Dunn ..... Savannah.
W. W. Jarrell ..... Savannah.
W. B. Crawford ..... Savannah.
R. A. Cason ..... Jewels.
J. R. Garner ..... Atlanta.
J. G. Tuten ..... Jesup.
E. F. Jones ..... Dublin.
P. M. Johnson ..... Lovett.
J. J. Stone ..... Milledgeville.
Robt. E. Brown ..... Dublin.
A. C. North ..... Newnan.
C. A. Edwards ..... Doerun.
J. G. Carter ..... Scott.
Ed. M. Coleman ..... Columbus.
Chas. L. Williams ..... Columbus.
C. F. McLain ..... Calhoun.
J. T. Gammage ..... Tippettville.
Chas. N. Howard, Jr ..... Cusseta.
J. P. Davis ..... Tennille.
Ralph Comer ..... Tignall.
H. P. Derry ..... Macon.
G. W. Barrow ..... Americus.
V. G. Williams ..... Chipley.
Jno. L. Moore ..... Griffin.
J. F. Lunsford ..... Preston.
F. B. Gregory ..... Lumpkin.
J. M. Kenyon ..... Weston.
J. W. Patterson ..... Dawson.
L. Lamar ..... Dawson.
A. H. VanDyke ..... Atlanta.
J. M. Barnett ..... Pretoria.
H. S. Maloy ..... Milan.
A. F. Harrington ..... West Point.
Archibald Smith ..... Atlanta.
B. N. Bussey ..... Waverly Hall.
G. W. Robinson ..... Macon.
Jas. M. Meadows ..... Vidalia.
R. H. Pate ..... Unadilla.
F. S. Belcher ..... Mansfield.

W. J. Jennings	Blakely.
Jno. E. Aschraft	Atlanta.
J. D. Middlebrooks	Powder Springs.
McD. Blanchard	Columbus.
H. W. Harris	Dawson.
W. P. Hardin	Harmony Grove.
R. A. Chambers	Columbus.
W. C. DeLamar	Mountain Hill.
S. A. Murray	Buenavista.
Joseph H. Johnson	Columbus.
Wm. E. Adams	Madison.
Aubrey Harper	Wray.
S. E. Young	Midland.
W. W. Edwards	Butler.
S. L. McElroy	Willacoochee.
M. M. Head	Zebulon.
John M. Crook	Columbus.
J. C. Hooten	Ellerslie.
L. W. Stanford	Waverly Hall.
W. E Farley	Hamilton.

F. W. McRAE, Chairman;
J. B. MORGAN,
W. S. ELKIN,
W. H. DOUGHTY,
A. B. SIMMONS.

On motion, the above were elected to membership in the Association.

Dr. Thrash offered the following suggestion to the Legislative Committee:

That the Legislative Committee appoint one member from each senatorial district to cooperate with them in securing favorable action by the Legislature on the bill creating a State Board of Health.

On motion, the Association adjourned to meet Thursday morning at 9:30.

MORNING SESSION—SECOND DAY.

The Association met at 9:30 o'clock and was called to order by the President.

Dr. W. L. Champion, of Atlanta, read a paper on "The Treatment of Stricture of the Anterior Urethra."

Dr. Charles Hicks, of Dublin, presented a paper on "Hemophilia."

Dr. Michael Hoke, of Atlanta, contributed a paper on "A Study of a Case of Spinal Curvature; New Investigations of the Mechanics of Severe Scoliosis; Preliminary Report on a New Operation."

Dr. J. M. Crawford, of Atlanta, read a paper on "Pathology and Treatment of Some of the Affections of the Upper Air Tract," which was discussed by Drs. Cox, Thomas, Roy, Stirling, Graham, and Dr. Crawford (in closing).

The Auditing Committee reported as follows:

We, the undersigned, have this day examined the books, accounts, and vouchers of the Secretary and Treasurer for the year ending April 15, 1903, and find them to be correct.

(Signed) VIRGIL O. HARDON, Chairman;
MICHAEL HOKE,
April 16, 1903. W. W. OWENS.

Dr. Howard J. Williams introduced the following resolutions, which were adopted:

Resolved, That sections 4, 6, and 9, of article 5, shall be stricken from the By-Laws, and the duties of the Program and Publication Committee shall be performed by the Secretary and Treasurer; and further, that the duties of the Auditing Committee shall be performed by an Executive Committee to be hereinafter provided for.

Resolved, That in section 3, article 7, of the By-Laws, for the words "Board of Censors" the words "Executive Committee" shall be substituted.

In place of the stricken sections of article 5 the following shall be inserted: "There shall be an executive committee of five members elected, one to serve one year, one two years, one three years, one four years, and one five years; and thereafter as the vacancies occur annually a member

shall be elected to serve for a period of five years. Vacancies occurring between sessions shall be temporarily filled by the President.

It shall be the duty of this committee to discharge all business matters of the Association not otherwise provided for by the Constitution and By-Laws. This committee shall report to the Association for its approval.

Resolved, That order of business, article 1, section 2, paragraphs 2 and 3 of section 5 shall be stricken and that the Report on Program and Publication shall be embodied in the Secretary's report.

Whereas, The duties of the Secretary and Treasurer are being performed at less expense than formerly, and whereas, additional duties are being placed upon him; be it

Resolved, That the Secretary and Treasurer shall receive a salary of $400 annually.

Dr. McRae, as Chairman of the Board of Censors, stated that the Board of Censors wished to be instructed by the Association as to what action the board could take concerning a party who had sent his resignation of membership to the Secretary of the Association while another member was preparing to bring charges against him, and that the Secretary had accepted this resignation, and therefore the board wished to be instructed as to whether this man was still a member of the Association, or whether the Secretary had authority to accept his resignation.

After considerable discussion the President ruled that the man was not now a member of the Association.

Dr. Taylor made a motion that the Board of Censors be instructed to prepare resolutions stating how a member should present a resignation of membership. Motion carried.

Dr. Ross P. Cox, of Rome, read a paper on "Remarks on the Pathology and Treatment of Deaf-Mutism," which was discussed by Drs. Graham and Shorter.

Dr. Arpad G. Gerster, of New York, who had been in-

vited to read a paper before the Association, presented the following: "Acute Suppuration of the Larger Joints and its Modern Treatment."

On motion, a vote of thanks was extended to Dr. Gerster.

The Board of Censors offered the following resolution which was adopted:

Whereas, A member of this Association, apparently guilty of conduct unbecoming a member of this Association, and who, on being put on notice that charges would be preferred against him, tendered his resignation to the Association; and whereas, the Secretary reported this resignation to the Association, which body, ignorant of the charges about to be preferred, accepted the report of the Secretary, thereby legalizing the act of the Secretary, be it resolved:

1st. That in the future the Secretary shall not be allowed to accept the resignation of any member of this Association.

2d. That he shall report, by name, the resignation or resignations of any member or members to the Association at its next regular meeting, so that the body as a whole shall be put on notice of the pending resignation or resignations, and take such action thereon as it shall deem proper.

(Signed) FLOYD W. MCRAE, Chairman,
J. B. MORGAN, Secretary,
For Board of Censors.

On motion, the Association adjourned until 2:30 p.m.

AFTERNOON SESSION—SECOND DAY

The Association reassembled at 2:30 p.m. and was called to order by the First Vice-President, Dr. J. A. Guinn.

Dr. Dunbar Roy, of Atlanta, presented a paper on "The Treatment of Internal Strabismus," which was discussed by Drs. Shorter, Stirling, Hiers, Hobbs, Calhoun, and Roy (in closing).

The Board of Censors recommended that Dr. W. H. Philpot be placed upon the roll of honorary membership. Recommendation adopted.

Dr. J. B. Morgan, of Augusta, read a paper on "Some

Indications for the Use of Normal Saline Solution," which was discussed by Drs. Howard Williams, Graham, Duncan, Moore, J. P. Davis, Westmoreland, McHatton, Hardon, and Morgan (in closing).

Dr. T. E. Drewry, of Griffin, presented a paper on "Report of a Case of Multiple Fibroid Tumors with Pregnancy—Operation—Cæsarean Section."

Dr. McHatton, of Macon, contributed a paper on "Our House and Our Servant," which was discussed by Drs. McRae, Graham, Hiers, Holland, Burns, Thrash, Earnest, L. G. Hardman, Rumble, and McHatton (in closing).

Dr. Smith Rumble presented the following motion, which was adopted as amended by Dr. Hardman:

That the Association of Georgia publish a sufficient number of copies of Dr. McHatton's paper to furnish every member of the Legislature with one.

Amendment offered by Dr. L. G. Hardman:

Also, that the paper by Dr. Thrash be included in this, and that copies of both be also furnished to the Legislative Committee for such purposes as they may see fit to use them; also that a copy of this resolution be attached to the papers.

Dr. J. C. McAfee, of Macon, read a paper entitled "An Operation for Permanent and Quick Cure of Hemorrhoids, Almost Painless and Bloodless," which was discussed by Drs. Ross, Owens, McRae, and McAfee (in closing).

Dr. M. Saliba, of Savannah, read a paper on "The Antiseptic Inhalation Treatment of Phthisis."

On motion, the Association adjourned until Friday morning at 9:30 o'clock.

THIRD DAY—MORNING SESSION.

The Association assembled at 9:30 and was called to order by the President.

Dr. J. Lawton Hiers, of Savannah, contributed a paper on "Some of the General Diseases and their Relation to the Eye."

Dr. J. H. Shorter, of Macon, presented a paper on "Report of Some Cases in Eye and Ear Practice," which was discussed by Drs. Stapler, Mitchell, and Shorter (in closing).

The President appointed the following delegates to represent the Medical Association of Georgia at the World's Congress on Tuberculosis, St. Louis, Mo., July 18–23, 1904:

Drs. A. Mack, Hawkinsville; S. C. Benedict, Athens; R. M. Harbin, Rome; E. C. Davis, Atlanta; J. C. King, Atlanta; J. N. Ellis, Atlanta; T. M. McIntosh, Thomasville; J. S. Tankersley, Ellijay; Jno. W. Walker, Waycross; F. D. Patterson, Cuthbert; R. L. Sample, Statesboro; J. R. Burdette, Tennille; E. A. Harris, Midville; A. P. Taylor, Thomasville; Thos. D. Coleman, Augusta; M. F. Carson, Griffin; Geo. Brown, Atlanta.

Dr. Theo. Toepel, of Atlanta, read a paper entitled "Spinal Curvature."

Dr. M. M. Stapler, of Macon, presented a paper on "Deafness, Its Prevention and Cure," which was discussed by Drs. Cox, Roy, and Stapler (in closing).

The paper of Dr. F. M. Brantley, of Senoia, on "Smallpox and Its Satellites," was read by title by the Secretary.

On account of lack of time, Dr. Howard J. Williams, of Macon, read his paper by title, "Osteomyelitis."

The President called attention to the fact that the Association should take some action toward urging the passage of the bill creating a State Board of Health and which would come up before the legislature at its next meeting.

The Secretary stated that Dr. Baird, the Chairman of the Legislative Committee, was unable to be present and had

sent his report of that committee, which was read by the Secretary, as follows:

REPORT OF THE COMMITTEE ON MEDICAL LEGISLATION.

To the Medical Association of Georgia:

GENTLEMEN:—Your Committee on Medical Legislation ask leave to report that the only effort made to secure legislation at the last meeting of the General Assembly was in favor of the Health Bill which was adopted by the State Association at its fifty-first annual session, at Atlanta, in 1900. This bill will be found printed on pages 53, 54 and 55 of the Transactions for that year.

The bill was introduced into the House by Dr. J.R. Whitley, the representative of Douglas county. The bill was referred to the Committee of the House on Sanitation and Hygiene, and was favorably reported by that committee. It was read the second time, and is now on the calendar awaiting its third and last reading in the House. The constitutional limit of the session arrested the progress of the bill at the stage indicated, and it will be put on its passage soon after the legislature convenes in June next, with a fair prospect of success.

Attached to this report will be found a letter from Representative Whitley relating to this bill. It may be proper to add that any attempt to substitute or to materially change the bill now before the House will make it necessary to start anew, thus relinquishing the advantage which the original bill now has, and risking the failure of a new bill for the want of time to pass these readings and the scrutiny of a committee at a single session.

Your committee had reason to believe that legislation inimical to the interests of the State and of the medical profession would be attempted during the recent session of the General Assembly, and, in that event, it was proposed to offer vigorous opposition, but happily the anticipated move did not materialize and we were consequently spared the expected contest.

No expenditure of funds was made by your committee and no obligation was incurred during the year.

Your committee recommends that the individual members of the Association use their personal influence with their several representatives in the General Assembly in favor of the Health Bill, and also, in a general way, adversely to any legislation looking toward the impairment of the laws regulating the practice of medicine in this State.

It also recommends that the usual appropriation of $50, or so

much thereof as may be necessary, be made for the use of this committee to meet possible contingencies that may arise.

Respectfully submitted,

JAS. B. BAIRD, Chairman;
E. H. RICHARDSON,
GEO. H. NOBLE,
FLOYD W. MCRAE,
C. D. HURT,
W. S. ELKIN,
Committee.

Atlanta, April 14, 1903.

Methods of securing the passage of the bill creating the State Board of Health were vigorously discussed by Drs. Whitley, McRae, Noble, Westmoreland, Hardman, and Hicks.

Dr. Westmoreland moved that the retiring President be made chairman of a committee consisting of one member of Association from each congressional district, not to supersede the Legislative Committee but to cooperate with them in securing the passage of a bill for a health department.

Dr. McRae moved that the Association again recommend the bill as printed in the Transactions to the General Assembly.

Dr. Thrash moved to amend Dr. McRae's motion by modifying the motion of Dr. Westmoreland, as follows:

Resolved, That a committee consisting of one member from each State Senatorial District be appointed as a special committee to cooperate with the committee on medical legislation, in procuring the establishment of a State Health Department. The retiring president, Dr. Chas. Hicks, to be chairman of this committee.

Amendment accepted and motion carried as amended.

The president appointed on this committee—

First District—W. W. Owens, M.D., Savannah.
Second District—O. L. Alexander, M.D., Reidsville.
Third District—J. L. Weaver, M.D., Baxley.
Fourth District—H. L. Burford, M.D., Brunswick.

Fifth District—J. L. Walker, M.D., Waycross.
Sixth District—J. M. Smith, M.D., Valdosta.
Seventh District—T. M. McIntosh, M.D., Thomasville.
Eighth District—J. D. Chason, M.D., Bainbridge.
Ninth District—P. H. Keaton, M.D., Damascus.
Tenth District—W. W. Bacon, M.D., Albany.
Eleventh District—F. D. Patterson, M.D., Cuthbert.
Twelfth District—J. S. Wimberly, M.D., Sunlight.
Thirteenth District—B. L. Bridges, M.D., Ellaville.
Fourteenth District—Chas. D. McRae, M.D., Rochelle.
Fifteenth District—M. L. Curry, M.D., Ailey.
Sixteenth District—J. R. Youmans, M.D , Stillmore.
Seventeenth District—H. B. McMaster, M.D., Waynesboro.
Eighteenth District—J. B. Morgan, M.D., Augusta.
Nineteenth District—J. H. Gheesling, M.D., Greensboro.
Twentieth District—J. R. Burdett, M.D., Tennille.
Twenty-first District—Ira E. DuPree, M.D., Danville.
Twenty-second District—Howard J. Williams, M.D., Macon.
Twenty-third District—O. G. Singleton, M.D., Fort Valley.
Twenty-fourth District—W. W. Stewart, M.D., Columbus.
Twenty-fifth District—A. H. Black, M.D., Thomaston.
Twenty-sixth District—R. H. Taylor, M.D., Griffin.
Twenty-seventh District—M. Z. Anderson, M.D., Covington.
Twenty-eighth District—J. G. Coile, M.D., Monticello.
Twenty-ninth District—Ralph Comer, M.D., Tignall.
Thirtieth District—A. S. J. Stovall, M.D., Elberton.
Thirty-first District—J. K. Burns, M.D., Clarkesville.
Thirty-second District—H. C. Whelchel, M.D., Dahlonega.
Thirty-third District—V. D. Lockhart, M.D., Mayesville.
Thirty-fourth District—J. G. Smith, M.D., McDonough.
Thirty-fifth District—W. F. Westmoreland, M.D., Atlanta.
Thirty-sixth District—A. C. North, M.D., Newnan.
Thirty-seventh District—F. M. Ridley, M.D., LaGrange.
Thirty-eighth District—J. H. Liddell, M.D., Cedartown.
Thirty-ninth District—W. L. Dean, M.D., Woodstock.
Fortieth District—George C. Erwin, M.D., Young Harris.
Forty-first District—W. B. Tate, M.D., Tate.
Forty-second District—R. M. Harbin, M.D., Rome.
Forty-third District—C. F. McLain, M.D., Calhoun.
Forty-fourth District—R. H. Tatum, M.D., Pittsburg.

CHAS. HICKS, M.D., Chairman,
Dublin, Ga.

As Chairman of the Special Committee on Reorganization of the State Association, Dr. McRae stated that he

wished to make a report which was to be published in the Transactions so that the members could read it and vote on it at the next annual meeting of the Association.

The President reappointed this same committee to continue to serve.

WHAT THE AMERICAN MEDICAL ASSOCIATION ASKS OF THE STATE SOCIETIES.

The following resolutions, among others, recommended by the Committee on Reorganization, were adopted at the last meeting of the American Medical Association:

c. That the State societies unitedly agree to federate themselves in the American Medical Association, and as a preliminary to this adopt a uniform organic law in regard to certain fundamental principles: viz., to divide their annual sessions into two branches, legislative and scientific; the legislative branch to be as small as is compatible with representation from all the county societies, and to be composed of delegates elected by the county societies.

d. That membership in the county or district societies shall constitute membership in the State society without further dues, and that no one be admitted to membership in the State society except through county or regular district societies.

e. That the funds to meet the expenses of the State society be raised by a *per capita* assessment on the county and district societies.

f. That a united effort be made to influence special societies to limit their membership to those who support the regular organization, and the semi-national and miscellaneous societies to encourage systematic organization, by covering a definite territory and also by limiting their membership to supporters of the regular organization.

g. That each State society create a permanent committee and a fund for the purpose of enforcing all medical laws in every part of its territory.

h. That each State society cooperate with the American Medical Association and with the other State societies in solving the problems now before the profession relating to medical education, medical legislation, reciprocity, licensing, etc.

Dr. Westmoreland, as Chairman of the Special Committee on Crawford W. Long Memorial, reported that the

committee had gone before the Legislature and that this body had selected Crawford W. Long and Alexander H. Stephens to represent Georgia in the Hall of Fame. That an appropriation had been secured to be payable four years hence, to be used in conjunction with the fund to be raised by the medical profession. That no special effort had as yet been made to raise the necessary fund, but that this would now be taken up, and that voluntary offers of contributions had been made from the East, North, and West, as well as from the South.

Dr. J. N. LeConte, of Atlanta, read a paper on "Gastroptosis."

Dr. A. G. Hobbs, of Atlanta, presented a paper on "Some Uses of Silver in Mucous Membranes in Modified Forms of Protargol, Argonin and Albargin."

The hour for the election of officers having arrived, this was next taken up, and resulted as follows :

President, Dr. H. McHatton, of Macon.

First Vice-President, Dr. J. H. McDuffie, of Columbus.

Second Vice-President, Dr. E. C. Thrash, of Oakland.

EXECUTIVE COMMITTEE.—Dr. F. W. McRae, five years; Dr. Howard Williams, four years; Dr. J. H. Shorter, three years; Dr. L. G. Hardman, two years; Dr. J. R. Burdette, one year.

Member of Board of Censors, Dr. A. Mack, Hawkinsville.

Delegate to American Medical Association, Dr. F. W. McRae.

Place of meeting, Macon.

Dr. Ralph Thomson, of Savannah, presented the following resolution:

WHEREAS, The Medical Association of Georgia, in this its fifty-fourth annual session, has been most hospitably entertained and provided for by the profession of Columbus, who has done it honor and itself credit; therefore, be it

Resolved, As a mark of appreciation we extend to the local physicians a vote of thanks, and to the Honorable Mayor, to the local press, to the hotels, and to all others who have been instrumental in adding to our pleasures, an expression of unbounded gratitude.

This was unanimously adopted.

INSTALLATION OF OFFICERS.

In retiring, Dr. Hicks thanked the members of the Association for their thorough cooperation and support. He then conducted Dr. McHatton to the chair.

Dr. McHatton expressed his appreciation of the high honor conferred upon him in electing him President of the Association.

Dr. Shorter moved that a vote of thanks be tendered Dr. Hicks for the admirable manner in which he had presided over the sessions of the Association. The motion was carried unanimously.

On account of lack of time the following papers were read by title:

Dr. Claude A. Smith, of Atlanta, "A Plea for Conservative Prognosis in Kidney Trouble."

Dr. W. F. Westmoreland, of Atlanta, "Surgical Infections, and their Treatment."

Dr. George H. Noble, of Atlanta, "Some Observations on Twelve Hundred Abdominal Sections."

Dr. W. S. Elkin, of Atlanta, "Some Interesting Cases of Abdominal Hysterectomy."

Dr. J. G. Earnest, of Atlanta, "A Nephrectomy, with remarks."

Dr. G. R. White, of Savannah, "The Vaginal Route in Gynecology."

Dr. E. B. Block, of Atlanta, "Unilateral Sweating."

Dr. L. G. Hardman, of Harmony Grove, "What is Meant by Regular in the Code of Ethics."

Dr. H. R. Slack, of LaGrange, "X-Ray Treatment of Acne."

Dr. Jno. W. Daniel, of Savannah, "The X-Ray Treatment of Locomotor Ataxia, with Clinical Results."

Dr. Ralph M. Thomson, of Savannah, "Criminal Kindness."

Dr. M. L. Perry, of Milledgeville, "The Early Treatment of Insanity."

Dr. H. F. Harris, of Atlanta, "Uncinariasis; Its Importance and Frequency in the Southern States."

Dr. W. E. Fitch, of Savannah, "Remote Effects of Latent Gonorrhea in the Female."

Dr. A. W. Stirling, of Atlanta, "Some Affections of the Head of General Interest."

There being no further business before the Association the meeting adjourned to convene the third Wednesday in April, 1904, at Macon.

POST-OPERATIVE TREATMENT OF SIX CASES OF ABSCESS OF THE APPENDIX, WITH SOME OBSERVATIONS ON THE USE OF LARGE DOSES OF STRYCHNIN FOR ILEUS.

By R M. HARBIN, M.D., Rome.

The operation of opening and draining an abscess of the appendix is comparatively simple, and there is no question as to the technique of the procedure. The successful issue of the case, however, depends largely on the after-treatment.

The more radical operation is advised by a few and consists of dissecting out the entire infected area, but more is gained by the conservative method in which the efforts of nature are utilized in walling off infections of the peritoneum. Few advantages are offered by the radical operation, while the dangers are much increased, and it is better to do a secondary operation, which will rarely be needed.

After draining these abscesses the restoration of the affected parts is almost complete. A writer[1], in referring to secondary operations, remarks: "Indeed it is a matter for surprise to find so little change in the normal condition of the parts in many cases. The safety of treating without removing the appendix is shown by the low morality. There were two deaths in seventy-four cases."

Berry[2] states that out of forty-one cases treated by the conservative method only two died, while in thirty-nine radical operations thirty-two died. The danger of recurrence is very slight after incision and drainage, and is estimated at 5.5 per cent. by Wallace.[3]

After the abscess is opened and pus mopped away a cautious search for foreign bodies should be made, but few will be found.

Iodoform gauze is preferable for packing except in children, who occasionally show marked idiosyncrasy to iodoform poisoning. A strip one to four inches wide should be carried to the bottom of the abscess cavity with the finger, having previously packed some gauze around the wound to protect the peritoneum. The less manipulation the better, as great harm can result. Irrigations and injections are inadvisable, as fluids for this purpose will spread infection by breaking down nature's protective adhesions. After mopping away all the pus the capillarity of the gauze secures ample drainage. The abscess cavity should be packed to about 3-4 its fullness as nearly as can be determined, and the exit still more loosely packed.

The gauze should also be packed around the peritoneal opening to keep away knuckles of intestines.

At the end of forty-eight hours the gauze has adhered to the peritoneum, thus making a closed channel for the escape of pus. Over this dressing sterile gauze and cotton may be applied, held by an adhesive strip around the abdomen and over this an abdominal cloth bandage. Whether the abscess wall be adherent to the abdominal parietes or not, the technique is not materially altered.

It is by far preferable to use morphine if the patient's comfort demands it, especially in children. The drug lessens vomiting and circumscribes the area of infection by lessening peristalsis. If there should be shock strychnin is added. Nothing should be given by the mouth for twelve hours, and then only a little hot or cold water. If there be decided shock an enema of a pint of normal saline solution, to which is added strong coffee, is ordered. Six hours later a nutrient enema is advisable, consisting

of one half ounce liquid peptonoids and one whole egg beaten together, and this repeated as needed.

The successful issue of the case depends largely on moving the bowels, and in forty-eight hours measures for that purpose should be applied.

Adhesions having walled off the infection, peristalsis should be aroused to free the intestines from newly formed adhesions and prevent symptoms of ileus.

As a preliminary strychnin should be given in large doses four hours previous to the purgative remedies, and the dose should be gr. 1-15 every two to four hours, hypodermically, until the bowels are moved. The dosage for children should be proportioned to the age.

The effect in two cases reported was very marked, and without it other remedies would probably have availed nothing.

The physiological effect of strychnin commended it as being a rational remedy in these cases, and should be administered hypodermically in maximum doses. Peristalsis of the intestines is hindered by adhesions and the nerve supply paralyzed by toxins.

Shoemaker says of the use of strychnin, "Peristalsis is increased and the bowels somewhat loosened."

As a purgative calomel serves the best purpose, being less liable to be vomited, and shold be given in half to one grain doses with bicarbonate of sodium every hour, until three to five grains are taken. The powders are ordered with a teaspoonful of water, and if vomited repeated in a half-hour. If this routine fails castor oil may be tried.

Recourse is usually had to the various enemata, which may be used seriatim. My preference is for the following: Half gallon of soapsuds water with half ounce of turpentine, which should be mixed by rinsing a cloth saturated with the turpentine over a large bar of soap. Also

may be tried half gallon of warm water to which one to three drachms of ox-gall is added. An infusion of flaxseed, to which turpentine and olive oil is added, may be tried, and warm water with glycerine and epsom salts often serves a good purpose.

Drastic measures are only indicated in diffuse or general peritonitis. After the bowels have been moved the dressing should be changed and wound repacked, and may be repeated according to the amount of discharge. The diet should consist of tea, coffee, meat broths, corn-meal gruel, etc. No milk should be given undiluted, as there is danger of the formation scybala.

Large abscesses require three to eight weeks for recovery.

The after-treatment of cases of rupture and general peritonitis is not materially different, except that more drastic purgation is needed.

In these cases the first danger is toxemia from peritoneal inflammation, and the next is the symptoms of primary ileus.

Fecal fistula is not an unfavorable complication and will require irrigation. Hernia frequently develops after these suppurative cases have healed, but spontaneous recovery may take place, especially in children.

Case 1.—W. H., aged twenty-six, a machinist, had previously good health and gave no history of any trouble in the region of the appendix. One week before I saw him he had had an acute indigestion which was relieved by a purge. A slight fever, however, persisted and was accompanied by a gradual enlargement in the right iliac fossa. The day before I saw him he had made a railroad journey of seventy-five miles. The enlargement was about the size of a small cocoanut, and there was almost an entire absence of pain. The diagnosis was evident and the abscess was opened and drained of very fetid pus. The subse-

quent history was unimportant, and he made a good recovery in six weeks.

Case 2.—Mrs. Blank, aged thirty-three, multipara, was subjected to perineorrhaphy and trachelorrhaphy on October 1, 1901, by Dr. W. P. Harbin. While convalescing she had an attack of intestinal colic from eating sauerkraut; pain and tenderness on the right side were well marked. She gave a history of having had two attacks of appendicitis, the last being three years previous, in which an operation was advised but was declined. This attack was partially recovered from. In the present attack purgatives were given and followed by satisfactory results, but she continued to vomit and suffer pain in the right side, along with an enlargement gradually increasing each day. Temperature varied from normal to 103° F. in the evenings and pulse beats did not exceed 90. The mass now corresponded to the size of a flattened orange.

By the assistance of Drs. Shaw and DeLay an operation was performed on the tenth day of the present attack, and a four-inch incision over the summit of the mass was made parallel to Poupart's ligament. On opening the peritoneum a bulging was observed under the mesentery of the ascending colon and caput coli, both of which seemed abnormally low. An attempt was made to aspirate the mass through the mesentery, but without success. Adhesions were very extensive, binding down about eight inches of the ascending colon. Separation of the adhesions was begun at the bottom of the right iliac fossa in a very slow manner and extended upwards, hugging the fossa until the mass was reached. This part of the procedure occupied nearly two hours. Much of the enlargement was due to old inflammatory exudates, and the abscess proper was not larger than a walnut. After mopping the wound dry a

piece of iodoform gauze was carried to the abscess cavity with the finger.

There was considerable shock but she reacted well in twelve hours. Symptoms of a very diffuse peritonitis developed, temperature reaching 103 degrees, pulse 130, with vomiting, pain and tympany. At the end of forty-eight hours strychnin was begun hypodermically in doses of 1-15 gr. every two hours along with a grain of calomel every hour until six were taken, two of which were vomited. The various enemata were used, and after twelve hours of strenuous efforts the bowels were moved. The wound was repacked and the discharge became profuse and offensive. In four weeks the wound closed and she has been well ever since, but she has hernia.

Case 3.—L. L., a young man seventeen years old, had acute indigestion and colic March 1, 1902. Ten days later I was asked to see him with Drs. Bradley and Battle of Cassville, Ga. There was no history of any previous attacks of appendicitis. Purgatives had been given with good results, but pain in the right side, with three or four degrees increase of temperature, persisted along with an indurated mass in the right iliac fossa about the size of a small apple. Laparotomy was done at once, and after separating the adhesions of the caput coli the abscess was ruptured and drained. The abscess was treated in the usual manner and recovery was uneventful.

Case 4.—R. C., a four-year-old boy, ate bananas on May 31, 1902, after which occurred pain in the abdomen and vomiting. Purgatives were inefficient, and three days later I saw him with a temperature of 102 degrees and pulse 120. The facies indicated an extreme amount of depression; castor oil and calomel purged well but gave little relief. A slight induration in the region of the appendix could be detected, and gradually increased until it equalled

the size of a lemon six days later. The abdomen was opened and drained of two or three ounces of fetid pus. The wound was packed with iodoform gauze. On the second day a scarlatinal rash with restlessness developed presumably due to iodoform poisoning, but passed off in twenty-four hours. On the fourth day, while repacking the wound without anesthesia, a false passage was made and resulted in the formation of a secondary abscess. His recovery was uneventful, but had hernia.

Case 5.—On November 9, 1902, I was asked to see B. G., a healthy girl two years and nine months old, at Shannon, Ga., with Drs. Shaw and Mull. Five days before she had an attack of acute indigestion from eating apples which caused vomiting, pain and tympany. The various purgatives were given without avail. Tympany was excessive and no peristalsis could be detected, heart sounds being distinctly audible over the entire abdomen. Temperature changes were inconsiderable and pulse beats 130 and very tense. A general peritonitis was very evident and presumably due to a ruptured appendix two or three days before. The abdomen was opened and a seropurulent discharge was drained away. Adhesions being extensive were separated down to the iliac fossa in the region of the appendix and the canal was packed with gauze. There was no appreciable shock and the patient's comfort was greatly enhanced. The usual routine of after-treatment was applied, and on the second day 1-100 grain of strychnin was given hypodermically every two hours along with ½ grain of calomel every hour. By the use of enemata and a dose of castor oil the bowels moved in twelve hours. In all 1-20 grain of strychnin was taken. The wound was repacked and this process repeated every second day. On the fifth day a violent colitis developed without assignable cause and was accompanied by a great

amount of tenesmus. Strychnin was continued in moderate doses, and after two or three days a "strychnin delirium" developed, causing singing, playing, laughing, etc., and was very different from ordinary delirium. When the drug was suspended the delirium subsided. The colitis improved in four or five days, but she was very weak. In such a condition it was difficult to nourish her, and in five weeks she died from exhaustion. She may be said to have recovered from general peritonitis primarily.

Case 6.—A. W., a nine-year-old boy, had previous attacks of pain in the abdomen. On December 13, 1902, he was indisposed and three grains of calomel were given, which quite relieved him. For a week his temperature ranged from normal to 103 degrees, and his illness was diagnosed one of gastro-intestinal intoxication. He was now allowed more food. On December 26, after eating some milk thickened with rice, he had a very acute pain in the abdomen, with symptoms of collapse, thready pulse, clammy perspiration, excessive vomiting and a great amount of tympanites. Twenty-four hours later I was asked to see him with Dr. Wicker and found all the above symptoms intensified. Pulse varied from 130 to 150 and irregular. A diagnosis of general peritonitis was made, probably due to a ruptured appendix. The abdomen was opened and adhesions found to be general and were separated down to the region of the appendix. A positive diagnosis could not be made as further manipulations were deemed to be unwise. The wound was packed with sterile gauze, which provoked a free serous drainage. The abdominal tension was greatly relieved and in every way his comfort was much increased. At the end of forty-eight hours his bowels moved spontaneously and tympanites was much reduced. The pulse and general condition was much improved. On the eighth day violent colicky pains

developed with vomiting. There was evidently intestinal obstruction, and the general condition was so bad operative measures were not advisable and only palliative treatment was applied. The vomit changed from a bilious to stercoraceous material. Nutritive enemata kept up his strength. Epigastric distention was so great that gastric lavage was resorted to, giving great relief, and was repeated two to three times daily. On the twelfth day after the operation a secondary abscess ruptured through the wound and colon, giving exit to a great amount of fetid pus. He died the next day.

The following deductions may be made:

1. The after-treatment of abscesses of the appendix is the most important part of the procedure.

2. Unnecessary manipulation is harmful and the conservative operation is preferable.

3. Early operation in cases of rupture and with general peritonitis will save some cases—especially children.

4. Strychnin in large doses is a powerful adjuvant to purgative remedies in relieving primary ileus.

5. Iodoform gauze should not be used in children for fear of iodoform poisoning.

6. Anesthetics should be used in repacking the wounds in children.

7. Gastric lavage gives great relief to cases with stercoraceous vomiting.

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THE SIN OF SO-CALLED CONSERVATIVE MEDICAL TREATMENT IN DISEASES REQUIRING PROMPT SURGICAL INTERVENTION.

By FLOYD WILLCOX McRAE, M.D., Atlanta.

In choosing the above title, I realize fully that I lay myself and the surgical side of our profession open to criticism on the part of physicians who think we are too anxious to operate and that we are constantly trying to find a good excuse to justify us in so doing. I appreciate further the fact that many unnecessary and useless operations are being done and have been done, and it is not my purpose to defend this kind of surgery. No physician could possibly have a greater contempt for a surgeon who would operate simply for a fee, or because the patient was willing to have some unnecessary thing done, than have I. I have been in a position to know of and see some surgery done that might better have been left undone. These, however, are but the exceptional cases, and I apprehend that there are comparatively few surgeons who in any way command the respect of even a small minority of their professional brethren in their immediate localities, who do much of this useless, and worse than useless, kind of work.

It is my purpose, however, to call the attention of the members of this Association to the sins of omission constantly committed by general practitioners in failing to call surgeons to help in the treatment of purely surgical conditions. It has been my misfortune, during the last few years, to see a great number of these neglected cases, that simple operations might have relieved had they been

done early, which were practically hopeless when surgical aid was called in. I feel it my duty to call your attention to a few of these cases, as they were treated by physicians, and good physicians, who failed to realize the danger until it was too late, or to fully appreciate their responsibility as physicians. These mistakes have been the result of carelessness and inattention rather than ignorance. Empyemas have been treated as typhoid pneumonias; strangulated femoral hernias as fecal impactions, and fulminant appendicitis as acute indigestion, because the doctors did not examine their patients carefully and arrive at a correct diagnosis by physical signs and exclusion. It has been my misfortune to operate on a number of cases of strangulated femoral hernia in women, the earliest time at which I was called in being four days after the hernia became strangulated. The other cases varied from five to eight days. In only one had a correct diagnosis been made, and that had been made by the patient herself, who was the widow of a physician. I operated on all these cases, but succeeded in saving only two out of six. Every one of these women ought to have been saved, and they could have been if early diagnoses had been made and immediate operations had been done. The innocent looking little tumor in the groin was considered of no importance and to have nothing to do with the case. Is it right to charge deaths like these to surgery? And still it is done by the community, and, I am sorry to say, not infrequently by the physicians themselves, who have not the moral courage to acknowledge their own mistakes.

Every case of acute obstruction of the bowels should have the benefit at least of an early surgical consultation, whatever the cause of the obstruction; whether it be a strangulated hernia, or some intra-abdominal condition. The symptoms are the same. There is pain, nausea, vom-

iting, collapse, weak, rapid pulse, cold, clammy skin, normal or subnormal temperature; unless the obstruction be due to some acute inflammatory condition. The vomitus is first, the contents of the stomach next, bilious matter, and then the intestinal contents. There may be one or two movements obtained from the lower bowel; after that, where the obstruction is complete, neither feces nor gas escapes. After fecal vomiting sets in and there is a rise in temperature due to beginning inflammatory changes in the intestine, operation offers comparatively little hope. It is a sin, not to say crime, to keep pouring down the throats of these unfortunate victims all sorts of nauseous and drastic purgatives in the effort to overcome a mechanical obstruction that can be relieved only by mechanical measures. Every attempt to purge such a patient increases the peristalsis, increases the pain, increases the exhaustion, increases the danger of the condition and lessens the chance of cure by the best planned and most skillfully executed surgical procedure.

Fulminant and perforative appendicitis are so frequently mistaken for, and treated as, acute indigestion, that I wish to call your attention to three of these cases that have fallen to my lot within the last fourteen months. One was a young man sixteen years old, with a history of one or two mild attacks of appendicitis. He was taken suddenly, with violent pain, nausea, later vomiting; pain increased constantly, marked general depression, rapid pulse, leaky skin, but no temperature. The symptoms continued progressively increasing until noon of the fifth day, when there was a sudden violent pain, followed by extreme collapse, subnormal temperature, intense sweating, facies abdominalis marked, with the most extreme restlessness and an expression of anxiety which was distressing to see. I was called in late in the afternoon. Advised

immediate operation. Patient was taken to St. Joseph's Infirmary and operated on twelve to eighteen hours after the onset of a general peritonitis. Pulse at the time of operation 140, temperature 97, respiration irregular, varying from 40 to 60. As soon as the peritoneal cavity was opened a large quantity of foul pus spurted out; as the adherent coils of intestine were separated a general suppurative peritonitis was disclosed. The appendix had ruptured near the cecum, but the poison was shut off temporarily by adhesive inflammation forming a large localized abscess which ruptured and flooded the general peritoneum. The patient died eighteen hours after operation.

The second case was a powerful negro mail-carrier, operated on at the Grady Hospital with almost the identical history as the one above. I was assisted in this operation by Dr. Nicolson. An enormous gangrenous appendix had perforated, thin adhesions had formed about it forming a localized abscess, which later ruptured, giving rise to a general septic peritonitis. He died about eighteen hours after the operation.

The third case was also operated on recently at the Grady Hospital. A prostitute had been treated for several months for attacks of pain and vomiting accompanied with fever, which would confine her to bed for from two to four days at each attack. She had been treated by a good gynecologist and by a general surgeon of considerable reputation, both of whom, according to her statement when she was brought to the hospital, had made a diagnosis of ovarian trouble and subjected her to prolonged local treatment. Operation disclosed a large, gangrenous appendix, free in the general peritoneal cavity, with just an adhesion of the tip to a small ovarian cyst, which had also become infected, forming an ovarian abscess. The most intense septic peritonitis existed at the time of opera-

tion. Dr. Virgil O. Hardon was at the hospital and assisted me in this operation. We worked together, completing the operation in a very few minutes, during which time the patient was being infused with normal salt solution. In spite of the most vigorous stimulation subsequent to the operation this poor girl died about forty-eight hours afterward.

I had the opportunity of showing these last two cases to the graduating class of the Atlanta College of Physicians and Surgeons, and I hope the object-lesson which they presented will be the means of saving many lives. Nothing but a sense of individual responsibility could induce me to operate on cases such as the three just detailed. Only the exceptional one can be saved, but it is the surgeon's duty to give every one the possible chance. Had careful physical examinations been made, the local signs and constitutional manifestations received due consideration, surgical help called in, all of these individuals should have been saved. None of these cases were very violent to begin with, but all became hopeless through delay. Why have physicians and the laity such dread of the scalpel? What is more conservative than a well-planned, skillfully executed surgical operation? Is it right to charge surgery with deaths that are due solely to delay? In the name of all that is right and fair, no! Sooner far blame the doctor or the patient who has withheld the surgeon's life-saving hand! In this day of clean, scientific surgery, the deaths chargeable to operations *per se* are too few to be recorded in comparison with those due to procrastination until surgery is resorted to only as a forlorn hope. Medicine has failed ignominiously. Surgery—*dernier ressort* surgery—is saddled with untoward results that rightfully belong to medicine, sins of omission or commission.

I have operated on almost a moribund case of typhoid

perforation, eighteen to twenty hours after the typical signs of perforation, only to find that the small, clean-cut perforating ulcer, that might have been closed with two or three Lembert sutures, had eventuated in a general peritonitis.

I have seen many cases of osteompelitis that had been treated for weeks medically terminated by loss of life or limb.

How many good old men are suffering the tortures of the damned under medical or surgical palliative treatment, who might be cured by complete prostatectomies! I do not know of any operation that gives more complete relief, or any class of patients who are so appreciative as are these old men when they are made to urinate like boys again.

These are a very few of the surgical diseases that are mistreated medically. Their name is legion. Again I wish to disclaim any intention of exaggerating medical sins or of minimizing those of surgery. We are all trying to get at the truth, to relieve pain, to prevent and cure disease, to lessen the sum total of human misery, to add to the years and the usefulness of our fellows.

With all the help we can get from physical signs, general symptoms, chemical and microscopical examinations of the urine, blood counts, X-ray examinations, etc., we must frequently be puzzled and make some mistakes. Other things being equal, mistakes will increase progressively as we fail to avail ourselves of these diagnostic aids. The symptomatic doctor, be he never so well read, who does not examine his patients, is a broken reed, upon which any poor sufferer must lean insecurely, finding no support when he most needs help.

What we all need is to take a broader, more comprehensive view of our professional obligations, to have less of ri-

valry, less of petty jealousies, to trust each other more completely, to consult more frequently and more freely, the physician with surgeon, the surgeon with the physician, each with fairness and candor to the other, all with hearty zeal and unflagging interest in the Godlike work of relieving human suffering. Brightening the lives of those who trust us, putting ourselves in their places, doing the greatest good to the greatest number.

DISCUSSION ON DR. M'RAE'S PAPER.

Dr. Harbin: I am glad that Dr. McRae has brought up this question, as it is so important to the physician and surgeon, and the trouble is that you cannot get a correct idea as to the proper course to pursue. The trouble is not due to carelessness of the physician. I suppose gangrenous appendicitis occurs in only one case out of ten cases of abdominal pain accompanying appendicitis. Therefore, you would operate ten times to save that one case of gangrenous appendicitis, and I don't know but what the mortality from ten operations would be greater than that from gangrenous appendicitis unoperated upon. This is a hard question to decide, and many cases will decline operation where it is needed, so that the physician is not to blame where the surgeon is called in late. We have known cases treated conservatively to go for a number of years without any serious trouble; while many of them will develop it again, the final mortality will not be as great as in a series of cases treated surgically.

If a man makes it a routine practice to operate in every case of intestinal pain or tenderness his total mortality will be greater. The stomach lavage gives great relief to hopeless cases of stercoraceous vomiting, and should always be used.

Dr. J. C. Johnson: I was wondering if the discussion was over and I could prefix a few remarks to my paper.

For fear I will lose that opportunity will say what I have to say now. I am glad that Dr. McRae read the paper with such earnestness as he did, and am glad that it has been discussed. It is not my purpose to take sides with the general practitioner or with the surgeon. I am neither, but have had considerable to do with the abdomen. We have reason to emphasize some things that have been said, but in steering from Scylla we should be careful not to be engulfed in Charybdis. Dr. Nicolson said that repeated attacks of pain in the abdomen meant something more than simple colic, and that you had better examine carefully, suggesting, as I infer, the frequent necessity of operation. I want to state that if every general practitioner referred every case of pain in the abdomen to the surgeon, all the surgeons in Georgia would not have the time to operate on the cases. I have seen some cases of persistent intense pain for forty-eight hours, and I will confess that I stood in fear and trembling whether to call in the surgeon or not. It would have been easier to call in the surgeon than not, and I usually do this, as the doctor should not consider himself but the welfare of his patient. A woman had intense pain radiating from the appendix up the gall-bladder and stomach, and somehow I hit upon the idea that it was a case of general intestinal displacement and diagnosed the case as spasm of the colon. This is one of several cases I have seen since then. It turned out to be that, and I received a letter from her the other day stating that she was well and had gained fifty pounds. The stomach and colon were down below the umbilicus, and by relieving this condition and toning her up, she was relieved and began to improve. You can have intense pain as a result of hyperplasia of the glands and mucous membrane of the lower end of the stomach. You can have intense pain by increased pressure in the ductus communis choledochus, and I have seen cases relieved by treatment

for same. On the other hand, where a physician is in doubt as to his diagnosis I think he is in honor bound to at least call in a surgeon. Consultation does not necessarily mean an operation.

Dr. Nicolson: I would like to state that I did not say that every person with abdominal pain should be operated upon, but I did say that every doctor should take the trouble to place his hand upon the abdomen of such a patient and make a careful examination.

Dr. Morgan: The paper of Dr. McRae is a very important one, and on the right line. I am sure that every member of this Association has been intensely interested in it. There can be no doubt that a great many of the delays so commonly experienced in the class of surgical emergencies mentioned by Dr. McRae in his able paper have been fruitful of much loss of life to patients, and of bitter unavailing regrets upon the part of the physicians. I believe that more cases of appendicitis have been lost by delay and the so-called expectant plan of treatment than from all other conditions combined.

I do not see that I can add anything to a subject that has been so fully covered by the paper and the interesting discussion which followed. I merely wish to say, that from experience and inclination, I am in full accord with the arguments advanced. It is but a short time, in my judgment, when physicians all over the country, as well as surgeons, will fully concur in the importance of early operations in that class of cases where it is found that delays offer so little encouragement and are so frequently the cause of danger and even death.

Dr. Elkin: I only want to indorse what has been said by the writer of this paper and by the doctors who have preceded me in this discussion. Early diagnosis is of great importance in appendicitis, and this is only obtained by a

very careful examination on the part of the attending physician. My rule is, where I see a patient with appendicitis, and the condition is not materially improved in the first twelve or twenty-four hours after the bowels have been moved by salts, oil or enemas, to operate. I do not believe that the general practitioner is always to blame for delayed operations, as it is very difficult to get the members of the family to consent to have a surgeon called at the beginning of these attacks. Too much stress can not be laid upon the importance of an early diagnosis in other cases as well as appendicitis. In gall-bladder cases, as well as tumors of the breast, it is very important that an operation should be done early if you want to save your patient's life. Simple cases often become serious ones when operative interference is postponed too long. I believe, with Dr. Johnson, that we see a great many cases in which abdominal pain is present where no operation is necessary, but I do not believe that Drs. Nicolson and McRae operate upon every case of pain in the abdomen. Many cases of catarrhal appendicitis get well without any operation, yet many patients die where the operation is postponed too late. I want to impress upon the general practitioner the importance of a careful examination of every case of pain in the belly and an early operation, if the condition does not improve in a reasonable length of time.

Dr. Visanska: As one of the general practitioners, more especially in diseases of children, I want to thank Dr. McRae for reading this paper. In these cases of appendicitis where you are in doubt you should play trumps and call in the surgeon. I think it is the duty of the general practitioner, where he is in doubt, to have the surgeon in consultation. I don't think it lowers the general practitioner in the estimation of the patient to call in the surgeon, and I am thankful that we have a great many in the State of

Georgia that we can rely upon. Not every case requires an operation, and it is the duty of the physician to call in the surgeon to see whether an operation is required or not, and if it is needed, it is needed at once, as it does not take long for gangrene to set in.

Dr. Duncan: I have been in general practice for more than thirty-five years and have seen quite a number of cases of appendicitis. I have in a number of cases called in a surgeon, and I have never regretted having called in one, and neither have I regretted not having called one. Many cases I have seen got well without a surgeon, and many got well with the surgeon, and so I have no regrets in the matter; but I do not believe that the general practitioner should be criticized for the results in cases that will not accept his suggestions and that will not permit a surgeon to be called.

Dr. McRae: I wish to say that this discussion is taking a turn which there is nothing in the paper to justify. There is no criticism in the paper of the general practitioner, and the point which I wished to bring out was that consultation should be free and unreserved, and that thoroughly surgical conditions should have surgical treatment.

Dr. Duncan: Every case does not require surgical treatment, but every case of fulminating appendicitis should be operated upon, and early at that. I approve of Dr. Harbin's idea of conservative treatment in many cases.

Dr. Carson: I don't think that it is exactly right to charge all the results to the ignorance of the general practitioner for several reasons. The public generally has been taught that it is dangerous to operate in a residence. I believe that the majority of cases are diagnosed properly, but the people will not allow you to operate. I wish there was some way of educating the people to allow an operation at the time it is needed.

Dr. Hubbard: I want to make the point that Dr. Carson has just made. It is unfair to charge all these things to the general practitioner for the reasons he gave. It is not our fault if the patient refuses operation until too late and then the surgeon operates and the patient dies. We get them to consent as soon as we can. The laity will accept the surgeon only as a last resort, and the fault is not ours but the ignorance of the public. There is no question that the disease is a surgical one, and surgical interference should be as prompt as possible.

Dr. Taylor: I seems to me that the line of discussion is being misunderstood. I understood that the paper was not charging the whole delay up to the general practitioner. The first point was the carelessness in making the general examination, and to this some must plead guilty. The next point was that where, after making an examination, the practitioner is in doubt, he should call in a surgeon—a plea for more intimate and frequent consultations. What has been said on this line is true, for every one who practices outside of the hospitals knows that it is difficult to get the consent of the patient for operation. They will decline operation until it is the last resort, and then comes up the treatment as mentioned by Dr. Harbin, that where you have an abscess formed you should open up and drain.

Dr. Hicks: This straw has been threshed over ever since I have been a member of the medical profession. We are no nearer a solution of the position which the surgeon and physician should occupy than when I first became a member of this Association. That more trouble results from lack of opening the abdomen than from opening it is true. But the surgeon is lacking in a good many respects; he is as much at a loss to know what he is operating for as the general practitioner is in making a diagnosis.

and the only thing to do is to make the general practitioner responsible for his part and the surgeon responsible for his views, and both together educate the public.

The surgeon does not discuss with the general practitioner the conditions that make operations now more necessary than formerly. The food that the people are eating is bringing about more trouble. When the surgeon is called to remove concretions it is his duty to recognize the causes which lead to the formation of these concretions, and the practitioner should know what the surgeon is doing when he enters the abdomen of the patient.

Dr. Kitchens: You can not blame the public for the position which they take in this matter of operating. A great many people have seen many cases get well without operation, and then when one case dies under an operation you should not criticize the public too much for not wanting an operation.

Dr. McRae (in closing): I am very much obliged to the gentlemen for the discussion, and am sorry that it took a turn which I did not intend it to take—i. e., a spirit of criticism. The paper was written and cases cited to show that mistakes are made by doctors and by surgeons. I pointed out some of the mistakes made by the physician, and acknowledged freely, and do now, that my mistakes are not less apparent than those of the general practitioner. What I did wish to do was to impress upon the physician the necessity for making careful examinations of the patient, and not treating them symptomatically, as has been done. Dr. Nicolson did not mean that every man who had a pain in his abdomen needed an operation, but that every man who has a pain needs a most painstaking examination, and where indicated the surgeon should be called in. To call in a surgeon does not mean an operation, and I should be ashamed if that were so. I know it is not so. If you

will look back over your experiences you will find that the majority of cases are not operated upon. What we want to do is to get together and educate the public, and avoid criticism of each other. When a physician speaks of a surgeon he should not say to the patient, "Oh, he will cut you open," or words to that effect. They say this unadvisedly and without wishing to carry the impression that it does convey; it gives the patient the impression that we cut everything. We do not want to cut any patient who can be cured by medical measures. All operations should be conservatively done. We want to impress upon one another that we are all working for the good of our patients, without an idea of my criticizing your mistakes or mine, but to do the right thing for our patients in all cases.

HYDROTHERAPY IN THE DISEASES OF THE DIGESTIVE SYSTEM.

By J. C. JOHNSON, M.D., Atlanta.

In presenting this paper I make no apology for rehearsing many facts long established and generally known, my purpose being to emphasize their importance and to invite more careful consideration of them.

The more extended my professional experience, the more convinced I am of the necessity of attention to details, of individual treatment, of constant watchfulness and direction of the little things in the lives and conduct of our patients.

A complete diagnosis of any disease is made with difficulty, and requires the greatest care. In all diseases I think it necessary to be constantly making diagnoses. An engineer would not think of running his disabled engine over a perilous path without repeated inspection of every part, nor would he omit ample provision of fuel and water in proper proportion.

In all its wonderful composition and activity the human body is a simple organism, animated by the same forces and subject to the same laws that govern the physical world. Let us have these facts in mind as we proceed.

The organic man, if we may so divorce his nature, lives by eating and drinking and sleeping. Each of these functions is as necessary to his health as harmony between his physical, mental and moral faculties is to his general well-being. It is usually taken for granted that, in the absence of insomnia, he will sleep enough, that he will eat just the

needed amount, if he has an appetite, and drinking takes care of itself.

You already perceive that in using the term hydrotherapy, I do not mean simply lavage. I mean the use of water mechanically, chemically and physiologically. I have selected this subject because of the universal use and abuse of water. An agent capable of good is equally capable of harm. Also, a remedy which is easily accessible, and with which we are more or less familiar, is apt to be employed indiscriminately; whereas, a prescription for the use of water can and should be as exact and reasonable as one for quinine and opium. It is no more wise to prescribe water for the stomach or the body without regard for its effect on the stomach and the body, than to prescribe hydrochloric acid, nux vomica or potash without the same regard. I do not mean to say that the same effect will be produced, but that effects as decided may be produced. I mean that when water is used as a wash for the stomach or drunk it should be so employed with a definite purpose. I suppose that there is nothing which goes into the stomach in such variable amounts. Thirst is not always a guide to the frequency or the quantity required, any more than is the sense of hunger to the amount and kind of food.

It is commonly known that water constitutes about two thirds of the body and that its functions are solvency, protection, circulation, secretion and excretion, and electrolytic condition. Any excess is harmful in the healthful state, because it not only embodies, as latent force or heat, that which would contribute to the vital agencies, but also overtaxes the heart and blood-vessels, and imposes increased duty upon the kidneys. Such a condition cannot continue long without damage to these organs. Normal secretion and excretion depend upon a normal arterial tension as much as upon the metabolism of the cells, and what-

ever perverts arterial tension must disturb these fundamental processes. No organ can tolerate overwork without compensation or loss of its normal relation to the balance of the body. So it is possible to produce or aggravate disease of the heart or kidneys by drinking too much or too little water. Disturbance of the heart and kidneys, either functionally or organically, is such a common attendant of digestive troubles that this fact, outside of its own virtue, is worthy of more emphasis and elaboration than time permits. It is always advisable to make a careful examination of these organs before giving directions about the kind, amount or frequency of water to be taken. The average man in health requires about three or four pints daily. Wide variations from this amount may be taken for a short period with perfect impunity, but, taken habitually, the results are uncertain.

I had a patient recently who, for some time, had been drinking daily a gallon of water. He complained of chilly sensations and depression. I reduced the amount to the normal and these symptoms disappeared. His temperature was 97. The cause for this has already been indicated in the reference to the relation between body heat and form material. Likewise, where not enough water is taken, symptoms of disturbed equilibrium, dizziness, drowsiness, headache and confused thought occur. I have witnessed relief from these symptoms by the normal use of water.

Liquids other than pure water are liable to create chemical changes which necessitate more than is contained in their solution; such as coffee, tea, and the various beverages.

Does this apply to mineral waters? In a measure, yes. About nothing, perhaps, in the treatment of diseases of digestion and of the liver and kidneys as well, does there

exist more fallacy, especially in the minds of the laity. They are about this as the brother in black is about the pill that purges—anything that makes them urinate "does all the good."

The binary salts which exist in mineral water, while they remain unchanged in their nature and sometimes in composition, produce changes, secretory, excretory and electrolytical, while in the body and during their passage from it. The possibilities of mineral waters for good are unlimited, but only the *vis medicatrix naturæ* protects many sojourners at mineral springs from harm.

A cup of cold water an interval before meals stimulates the secretion of gastric juice; at meals, or during the process of digestion, it dilutes the gastric juice, and if this is deficient in amount or in the relative proportion of ingredients, impairs its chemical action. An excess of water during the process of normal digestion in any event increases the mechanical work of the stomach with a needless expenditure of vital energy. The application of these facts is easily apparent. It is a common habit among dyspeptics to drink a glass or two in the early morning and then as much as they can hold an hour or two after meals, to wash the food out of the stomach, or with some vague misconception of possible benefit. It requires about an hour and a half for the normal stomach to absorb two pints of water, so that, as a rule, not more than a half pint should be taken within an hour before meals, and in case of atony and in the absence of positive indications for its use, not more than half this amount should be taken within this time.

When dilution of the gastric juice is required, it is better to drink within an hour or two after meals as much as may be needed. In short, three conditions are to be borne in

mind as to indications and contraindications for the use and amount of water drunk in close proximity to eating.

Can the gastric juice be diluted without impairing its action? Can the muscular activity of the stomach be increased without disturbing its compensatory relation? If there is an excess of secretion, is it better to neutralize it or to dilute it? If there is atony, it is best to neutralize. If there is not, either means may be employed.

There is another objection to drinking water at meals. The tendency of the average person is to eat too hurriedly. Drinking during mastication tends to lessen its effect and perfect insalivation is impossible; chemical action in the mouth is impaired and incomplete, and the food is precipitated into the stomach unfit for gastric digestion.

When water is taken at meals, the act of drinking should follow the act of mastication, or the whole amount should be taken just after meals. Most animals drink only after meals.

Perhaps more harm is done by lavage than by injudicious drinking of water. I have observed that many patients who have taken for a considerable length of time the so-called "water cure" for stomach trouble, or have used the same themselves, have either reduction or total lack of juice from atrophy of the gastric cells, or marked gastroptosis, or both.

Full discussion of this feature of this paper is out of question here. Therefore, I direct your attention briefly to the most pertinent facts. The evil which results from lavage is due to its use when contraindicated, to its excessive use, and to the use of it at the wrong time.

The average person is entirely ignorant of its effect and nearly as much so of its purpose, save that it relieves the stomach of something which, it is supposed, ought not to be there. He knows nothing of the food requirements of

the body, nothing of the absolute necessity of the vital balance and washes away the essentials of life, with the same sense of security and freedom with which he washes dirt from his hands. Even a physician may forget that disease is but the part and product of a morbid process, and that this process can be restored to the normal only by employing the same factors whose perversion led to its development.

It is not always the case that food is disagreeing when there is pain or fullness or soreness in the stomach. It may be that the stomach is disagreeing with the food. In either event, it may do more harm to remove or lessen the amount, than it would to suffer whatever discomfort it may be causing. Little good is accomplished by rigid dieting in stomach troubles. In diseases of the body, as in affairs of life, we are often driven to a choice between evils. It will hurt a sprained ankle to run from a burning building, but it were better to lose the leg than that the whole body should perish. It is hardly necessary to make practical application of this fact to an assembly of scientific men. Suffice it to say that lavage nor anything else should be used which interferes with the maintenance of vital equilibrium.

Of course, in acute indigestion, where the process is costing the system more energy than the food remaining would furnish, it should be removed. It is seldom wise to leave the decision of expediency to the patient. Without good reason a stomach tube should never be placed in the hands of the unskillful. I have known some who, having at hand this ready means of relief, would deliberately, and for the mere gratification of the sense of taste, eat that which was not only contraindicated in their conditions, but of questioned fitness for any one. This is a pernicious habit, akin to that of a lower species. Besides, lavage is

not wholly devoid of danger. Especially is this true in carcinoma, ulcer and erosion. Yet, in the two last named disorders, much benefit may be derived from its employment.

There can be no fixed rule for the use of lavage. The amount, time and frequency must vary with individual cases, and in the same case at different periods. While in chronic disorders it may be needed indefinitely, regularly and with system. It is more important to limit its use to actual requirements. In other words, let the stomach do as much as is possible without injury to itself. This is a law of duty and expediency set forth and rigidly insisted upon by the animal economy, and it behooves us to observe it.

There is no uncertainty, however, as to the amount of water which should be introduced into the stomach at one time. I do not mean the full amount which may run into and out of the stomach during a lavage, but which should be allowed to be in the stomach. More than a quart is seldom advisable. Less than this may suffice and serve the purpose better. Warm water is laxative in its effect upon the muscular coat, and its weight, with this advantage, may overdistend the organ, possibly producing cramp and favor gastroptosis or dilatation. This should be borne in mind when lavage is continually used.

For diagnosis lavage is indispensable. So complex is the etiology and variable the symptomology of gastric disorders, actual observation and examination of gastric contents are necessary. I do not refer to the test made but to the secretion and residue in the fasting state.

Perhaps it gives the best results in catarrhal gastritis, where there is an accumulation of tenacious mucus. It also affords ready means for applying remedies to the gastric mucosa.

The introduction of the stomach tube is a separate study.

I can only refer to the action of water in constipation and on the skin. Common decency demands the bath. Yet for this very purpose it is sometimes necessary to prescribe water. On the other hand, the function of the skin may be impaired by immoderate bathing. It is a fad with some. Some vest it with the virtue sought by Ponce de Leon in the Spring of Perpetual Youth. Extremes in anything are seldom safe.

The morning plunge or shower has its use, but it requires a fine distinction to insure its benefits.

The skin is studded with cells and connecting nerves which relate every impression to the higher centers, and it is the aggregate of the receipts and expenditures by these centers that proves the daily balance-sheet of life. Before producing action measure the reaction desired and guard the successive movement and rhythm of the vital pendulum, never losing sight of the fact that it is not the potential of water that produces results, but the forces it arouses or coordinates.

DISCUSSION ON DR. JOHNSON'S PAPER.

Dr. Harbin: I would like to commend Dr. Johnson for bringing up this subject of water. Many patients usually go to the quacks for water treatment, and I think Dr. Johnson's paper should be published.

RETINITIS ALBUMINURICA.

By T. H. MITCHELL, M.D., Columbus.

Idiopathic retinitis is by no means a condition frequently met with, but in the vast majority of cases, inflammatory conditions of this very important structure are secondary to and dependent upon some other and remote pathological condition. Hence, we have such terms as syphilitic retinitis, diabetic retinitis and albuminuric retinitis. I shall confine my remarks to that form of the disease known variously as retinitis albuminurica, renal retinitis and the retinitis of Bright's disease.

Although albuminuric retinitis has as its etiology a grave and preexisting inflammation of the kidney, the gradual loss of acute vision is the first symptom which, in a great number of instances, prompts the patient to apply for consultation, and so pathognomonic is the picture of the fundus oculi as seen with the ophthalmoscope, that a reasonably certain diagnosis of Bright's disease can be based on this information alone.

In a somewhat typical case of well-developed albuminuric retinitis, the macula lutea is surrounded by a great number of variously sized, elongated, white, glistening spots, which radiate in a spoke-shaped or stellate manner from this point.

Many cases of renal retinitis may be observed to pass through the various stages of hyperemia, congestion, infiltration and hemorrhages, to the stage of fatty degeneration and atrophy, unless observation is cut short by a fatal ter-

mination of the nephritic condition on which the retinal lesion depends.

While the visual acuity may vary from normal vision to an ability to distinguish objects only, total blindness is probably never produced, nor is there any change in the field of vision.

While both eyes may not be affected at the same time, the disease is almost universally bilateral, though a few unilateral cases have been reported, De Schweinitz having observed two unilateral cases.

The white, glistening spots which are seen about the posterior pole are produced by a fatty degeneration of an inflammatory exudate into the deep as well as the superficial structure of the retinal tissue, and they are found in the region of the macula because here the capillary arterioles are most numerous.

They assume and present a characteristic stellate arrangement for the reason that the connective tissue fibers of Muller, the supporting fibers of the retinal elements, radiate from the region of the macula lutea.

In addition to the white, glistening spots heretofore referred to there may be larger, yellowish-white spots about the nerve head, together with more or less retinal hemorrhages, but these are neither constant nor pathognomonic.

While retinitis albuminurica may be produced by either interstitial or parenchymatous inflammation of the kidney, by far the greater number of all cases is due to chronic interstitial nephritis. It may likewise be produced, though to a less notable extent, by the albuminuria of pregnancy and scarlatinal nephritis.

The prognosis of retinitis due to the albuminuria of pregnancy and the exanthemata will depend very largely upon the duration of the condition of which albuminuria is a complication, and in the case of pregnancy, for in-

stance, if gestation be terminated before secondary degeneration of the inflammatory exudate transpires, the acuity of vision is more or less perfectly restored.

In this connection, I am of the opinion that impaired vision coincident with gestation is often treated too much as a matter of natural consequence by many practitioners and left to be righted by nature at her pleasure, when, in reality, albuminuric retinitis is the immediate cause of this loss of function, and demands radical interference at the hands of the obstetrician before secondary degenerative changes transpire.

In every case of defective ocular function during gestation the renal secretion should be repeatedly examined for albumin, and whenever this is found, particularly if the impaired vision be progressive and accompanied by a tendency towards convulsive seizures, artificial means for terminating the pregnancy should be resorted to. With useful vision on the part of the mother so gravely jeopardized, and the perilous condition of life itself of both mother and fetus from so vitiated a condition of the blood, this procedure is, in my opinion, abundantly justified.

Typical cases of renal retinitis are those due to chronic interstitial inflammation of the kidney, and as heretofore stated, these compose by far the majority of all cases.

The manifestation of retinal lesions in a case of chronic interstitial nephritis is a symptom of very grave import, and evidences not only a greatly vitiated condition of the blood but a degeneration of the vascular system as well, foretelling an early and fatal termination of the case either from cerebral hemorrhage, uremic toxemia or some other of many possible complications common to this type of nephritis. Cerebral apoplexy is the immediate cause of death in quite a large number of cases.

Although chronic interstitial nephritis may be stretched

out over a long period of time, and while it would be a hazardous undertaking to prognosticate as to its time limit under any condition save that in which the danger-signal of retinitis makes its advent, it is precisely when this complication is present that we are enabled to prognosticate within narrow limits with a reasonable degree of certainty.

A study of such statistics as have been collated discloses the significant fact that not less than 50 per cent. of all victims of albuminuric retinitis die within six months from the appearance of the eye lesion, 80 per cent. die within one year, while fully 90 per cent. die within two years, leaving barely 10 per cent. who will succumb in from three to ten years.

The prognosis then of albuminuric retinitis as a complication of chronic nephritis, is extremely unfavorable, not alone as to vision but as regards the life of the patient as well, the vast majority of all cases terminating fatally in from a few weeks to ten or a dozen months.

A brief report of three cases which are typical of a large class, will serve to illustrate the assurance with which the physician may prognosticate after he has made a careful and accurate diagnosis of retinitis albuminurica by means of an intelligent ophthalmoscopic view of the fundus oculi, reinforced by a repeated urinalysis together with such collateral information as may be manifest.

Case 1.—J. T. W., male, aged twenty-four, iron molder, came January 22, 1894, with an imperfect vision which had developed and gradually grown worse during four weeks prior to his visit to my office.

The patient considered his general health good, he ate well, slept well, felt well, and only wished me to adjust to his eyes a pair of lenses that would correct his defective vision, which he had tried in vain to have corrected by the

various "graduate opticians" of the city. His vision in the right eye was 20/160, in the left eye 20/60, not improved by any lenses.

An ophthalmoscopic view of the fundus oculi disclosed the papillæ swollen, with imperfectly outlined edges, while distinct white spots or patches were seen at the posterior pole radiating from the macula lutea, particularly noticeable in the right eye.

The urine, which was pale, clear and limpid, had a specific gravity of 1010 and was loaded with albumin, fully one third by volume after boiling. Diagnosis, albuminuric retinitis; prognosis, very unfavorable. This young man died of uremic toxemia in less than sixty days from the date of his first visit to my office, and in less than ninety days from the original manifestation of the eye symptom.

Case 2.—Edward M., aged forty-six, freight-train conductor, came October 25, 1897, with vision in right eye 18/80, in left eye 18/60, which was not improved by lenses. While he had not been quite well for some time, he had not lost any time from his work nor had he consulted a physician. He suffered quite a good deal with frontal headache and frequently vomited his food. Had swelling of the eyelids, which was worse on rising in the morning. Vision began to fail three weeks prior to the above date. Passed more than the normal amount of urine, a specimen of which, passed at the time of this consultation, had a specific gravity of 1012 and contained a large quantity of serum albumin. A diagnosis of retinitis albuminurica was confirmed by an ophthalmoscopic view of the fundus which presented a characteristic picture. With an unfavorable prognosis the patient was referred to his family physician for treatment, and I did not see him again. The case terminated in death on December 17, 1897, less

than eighty days from the first appearance of the retinitis, with symptoms of cerebral hemorrhage.

Case 3.—James M. S., aged forty-two, came December 11, 1897, with impaired vision which had been progressive during four or five weeks prior to the consultation. He had been in poor health for several months; passed more than the normal amount of urine; had much frontal headache and frequently vomited his food soon after eating. Had a ravenous appetite and drank much water. Vision with either eye equalled 18/60, not improved by lenses. A diagnosis of albuminuric retinitis, based on an ophthalmoscopic view of the fundus oculi, was confirmed by a chemical anaylsis of the urine, which had a specific gravity of 1010 and contained a comparatively small amount of albumin.

Being dissatisfied with the progress of his case, he passed from under my observation in about two weeks, but my unfavorable prognosis was confirmed by a newspaper report which stated that the unfortunate victim died suddenly of "heart disease" in a neigboring city on January 11, 1898, just thirty days from his first visit to my office, and probably less than ninety days from the original manifestation of the retinitis.

The treatment of renal retinitis resolves itself into the therapeutic management of the general constitutional disease or condition of which it is a local manifestation.

THE TREATMENT OF CARCINOMA OF THE CERVIX.

By VIRGIL O. HARDON, M.D., Atlanta.

The purpose of this paper is not to offer any new treatment of cancer of the cervix, but simply to emphasize certain points which are already well-established but which appear to have escaped the attention of many practitioners of medicine.

The wonderful progress which has been made in the science of medicine during the last half century has increased the average duration of life by about ten years. This has been effected by lessening the mortality in many of the diseases to which flesh is heir and by diminishing the frequency of many diseases by sanitary and other measures.

But unfortunately cancer of the cervix cannot be included in either of these categories. The statistics gathered by Baldy have shown that under the most approved method of treatment a permanent cure cannot be hoped for in more than five per cent. of cases. Statistics also appear to show that there has been a marked increase in the frequency of malignant growths in the last fifty years. Hence, at first glance the treatment of cancer of the cervix would appear to present a most discouraging aspect. But when it is remembered that it is but a short time since every case of this disease inevitably terminated in death, a saving of five per cent. of cases must be recognized as a distinct gain. I shall also presently show that in spite of the greater frequency at the present day, something has been accomplished in the way of prevention, so that the increase has

been less decided than it would have been if preventive treatment had not been adopted.

It may seem a bold assertion to say that cancer of the cervix is a preventable disease. Yet in the light of our present knowledge the statement is unquestionably true. A discussion of the prevention of the disease necessarily involves the study of its causation, and therein lies the whole gist of the matter. It is now a quarter of a century since Emmet first advanced the theory that cancer of the cervix is due to laceration in labor. He said "One fact we may accept beyond question, and that is, the occurrence of this form of malignant disease in a woman who has never been impregnated must be exceedingly rare." In his recent work on Cancer of the Uterus, Cullen reiterates the same idea, and says that in fifty of his cases of carcinoma of the cervix, in which accurate data were available, forty-nine had had children. No careful and competent observer from Emmet to Cullen has failed to corroborate these views. That laceration of the cervix is the determining factor is shown by the statement of Emmet, that he has never failed to demonstrate the existence of such laceration in cases where the disease had not yet involved the whole cervix. It is also shown by the fact, noted by Emmet, by Kelly and by others, that in most of the rare cases in which carcinoma has occurred in the cervices of women who had not conceived, there was a history of instrumental dilatation of the cervix to account for it. Boldt, in one of his cases, was able to prove beyond question that the original point of attack was in the depths of a laceration of the cervix. The long-continued irritation of the cervical tissues by nature's efforts at repair is the cause of the perversion of nutrition which results in carcinomatous degeneration. If these statements be true, as they have been proven to be by a quarter of a century of observation, it is obvious that the prophylaxis of cancer of the cervix consists in the

timely repair of cervical lacerations. The proposition may be laid down without fear of successful contradiction, that if every laceration of the cervix were subjected to operation before the tissues involved had taken on malignant changes, cancer of the cervix would soon become as notable for its rarity as it now is for its frequency. The importance of this conclusion cannot be overestimated. If thousands of women die every year from a disease which can be prevented by a well-known treatment based upon well-established principles, that fact is a serious reflection upon the profession of medicine. The great frequency of cancer of the cervix would seem to argue a culpable ignorance or a still more culpable negligence on the part of the profession in general. The diagnosis of a laceration of the cervix does not require the skill of an expert. The tyro in medicine can recognize it. If every physician would examine every woman a month after he has attended her in labor, and, if a laceration is found, would warn her of the danger of allowing it to go unrepaired, cancer of the cervix would become almost a thing of the past.

When cancer of the cervix is already present the question of how it shall be treated constitutes a grave problem which requires separate settlement for each individual case. The cases which present themselves may be divided, with reference to treatment, into three classes:

1. Operable cases which offer a possibility of permanent cure.
2. Operable cases which offer no hope of permanent cure.
3. Inoperable cases.

Unfortunately the number of cases in the first class, the operable cases which offer a possibility of permanent cure, is exceedingly limited. This fact is due to the obscure and insidious character of the first symptoms of the disease. But not entirely to this cause. Here again the general practitioner is often at fault. The first symptom of can-

cer of the cervix is, in the majority of cases, menorrhagia, or metrorrhagia. The patient often ignores this symptom in the absence of pain or other indication of disease. If she reports it to her physician, he will often ascribe it to the change of life, or otherwise treat it as a trivial matter. When, later on, the advent of pain and foul discharge indicates to the patient the existence of serious disturbance in her pelvis, she again seeks medical advice, and her physician then recognizes the serious nature of the case. He sends her to a specialist for operation, only to be told that it is too late. Thus a valuable life is sacrificed through the ignorance or the negligence of the physician. This is not a fancy picture, nor is it an infrequent one. If every physician would investigate by vaginal examination every case of abnormal menstruation, especially in women over forty years of age, and when in the slightest doubt send the patient to one whose experience will enable him to resolve the doubt, the number of operable cases which offer a hope of permanent cure would be materially increased.

What cases belong in this first class? There is no rule by which a strict line of demarcation can be drawn. In a general way it may be said that those cases in which the disease has not extended beyond the cervix offer the best prospect for permanent cure. Yet even in the majority of these cases recurrence will follow operation. The lymphatic glands of the pelvis become involved very early in the disease. Such involvement precludes all possibility of permanent cure. Any one who has studied the location of the deeper glands of the pelvis need not be told of the anatomical impossibility of their entire removal. In the majority of cases which seem most favorable for operation recurrence will take place. It is also true that a few of the cases which seem less favorable for operation will offer an agreeable surprise by remaining free from recur-

rence. I would incidentally remark, in this connection, that every case of permanent cure is open to the suspicion, of error of diagnosis, unless the presence of carcinoma has been proven by expert microscopical examination.

In the second class, operable cases which offer no hope of permanent cure, are included those in which breaking down of cervical tissue has taken place, or the induration has extended beyond the cervix into the vaginal vault, but in which the womb still remains movable. Mobility of the womb should, in my opinion, be regarded as the decisive test between operable and inoperable cases. When the cancer has reached the stage of invasion of the vaginal wall, or of ulceration, the pelvic lymphatic glands will inevitably have become involved, and a permanent cure is impossible. What benefit, if any, may be expected from operation in such cases? It may be confidently expected that life will be prolonged, and that even though recurrence takes place, the symptoms will be much less distressing than if no operation be undertaken. After removal of the womb by vaginal hysterectomy, the period of immunity from the disease may extend over several months, and even years, a much longer duration of life than could possibly be expected if the disease had been allowed to pursue its natural course. Such prolongation of life is a desideratum, at least from the patient's point of view, and constitutes a legitimate object of treatment. Not only does removal of the womb in hopeless cases prolong life, but when recurrence finally takes place it is accompanied by less distressing symptoms than are present in those cases in which the womb has been allowed to remain. There is much less tendency to hemorrhage. One of the physiological functions of the womb is periodical bleeding. Any pathological derangement of structure tends to corresponding derangement of function, and therefore the diseased womb bleeds more freely and with less provocation

than any other of the pelvic tissues. There is also less of the stinking discharge which is so annoying to the patient and her friends. This offensive odor is due in part to the altered secretions of the muciparous glands of the uterus, and in part to the decomposition of broken-down tissue. That it is not entirely due to the latter cause is shown by the fact that it is often present before breaking down of tissue occurs. If the womb be removed recurrence is accompanied by a discharge which is less in quantity and less offensive in odor, a very distinct gain to a patient of delicate sensibilities. Clinical experience has also shown that recurrent cancer after hysterectomy is accompanied by less pain than the original disease. For these reasons vaginal hysterectomy is, in my judgment, indicated whenever the womb is still movable, and the operation is therefore practicable.

The cases reported by Byrne, of Brooklyn, seem to show that the results, as regards permanent cure, obtained by high amputation of the cervix with the cautery knife, compare favorably with the results of total hysterectomy. But since a permanent cure can be hoped for in only five per cent. of cases, under either plan of treatment, it is the part of wisdom to select the operation which will be most beneficial to the ninety-five per cent. of cases in which recurrence is to take place. For this reason total vaginal hysterectomy has been almost universally adopted as the operation of choice. I shall not describe the technique of this operation, but will only say that my experience has led me to prefer the clamps to the ligature as giving greater facility of operation and less danger of hemorrhage. The mortality from the operation is very small. In my own experience I have been so fortunate as to have one hundred per cent. of recoveries up to the present time. But the operation seems to have a small inherent mortality which will probably show itself in my practice sooner or later.

In the treatment of inoperable cases much can be accomplished to prolong life and lessen suffering. It is absolutely inexcusable to leave such cases untreated, with the statement that nothing can be done. The great majority of women who die from cancer of the cervix die from the chronic septicemia induced by the absorption of septic matter from the diseased tissues and from the decomposing débris of ulcerated surfaces. To this cause are chiefly due the cachexia, the rise of temperature, the loss of strength and appetite, and the emaciation which characterize the later stages of the disease. The prevention of septicemia by appropriate treatment will enable the patient to maintain a comparatively good general condition almost up to the occurrence of the inevitable death. By such treatment life may be prolonged for months, and in some cases even for years. My plan of treatment consists of frequent removal of all broken-down tissue with the sharp curette and the daily application of antiseptic solutions to the ulcerated surface of the cervix. I formerly used tampons of absorbent cotton, saturated with a solution of chloral hydrate, and then rolled in iodoform. But I found that the odor of iodoform interfered with the appetite of the patient, and I now use boric acid. The patient can be taught to use these tampons herself. Under this treatment I have seen women who were bed-ridden and apparently almost moribund, gain strength, appetite and flesh, rise from their beds, and live for months in comparative comfort. Pain can be relieved by morphine, which should be given without hesitation in sufficient doses to accomplish its purpose. Hemorrhage can be neither foreseen nor prevented. When it occurs it may usually be controlled by tamponade of the vagina. I have found that severe hemorrhages are much less liable to occur in cases which are subjected to frequent curetting. In this class of cases death is, of course, inevitable. But by adopting

the methods which I have described much may be accomplished in postponing the fatal issue and in smoothing the patient's pathway to the grave.

The points which I desire particularly to emphasize are—

1. The importance of early repair of all lacerations of the cervix as a preventive measure.

2. The importance of early recognition and treatment of the disease in order to increase the chance of a permanent cure by operation.

3. The advisability of hysterectomy in operable cases which offer no prospect of a permanent cure.

4. The value of palliative treatment in inoperable cases.

ABDOMINAL SURGERY IN THE PRIVATE RESIDENCE.

By M. F. CARSON, M.D., Griffin.

My purpose in selecting this subject for my paper is not to discuss the disadvantages of the sanitariums (for in my opinion they have none), but to bring before the profession what I believe to be a very much exaggerated disadvantage of operating in the private home.

A few years ago, before a sanitarium was so essential to a reputation, it was no uncommon thing to find our best surgeons living in the smaller towns and doing good work in the private home.

To-day the trend of public opinion is towards the sanitariums. The question naturally arises with the physicians living in small towns: Is it because it is so much better for the patient that he be operated on in a sanitarium, or is it that it benefits some one else?

If it is true, as the public has been taught, that good surgery can be done and good results obtained only in sanitariums, then those of us who have not access to these institutions, must either establish a sanitarium, or abandon that most profitable branch of our profession, and advise our patients to go to sanitariums. If it is not true, and we can prove it by practical results, then it is our duty and to our interest to present our side of this question, and endeavor if possible to overcome the public sentiment against operating in the private home.

What are some of the disadvantages of operating in the private residence? First: Asepsis, by far the most essential

thing to successful surgery. I am confident that by the exercise of the proper percaution, that by the same method and for the same expense, we can make the room in the private home just as fit for surgical work as it is possible to make a room in any sanitarium.

If the surgeon who operates in the home sees to it that all furniture and curtains are removed, the floor thoroughly rubbed with a strong solution of bichloride of mercury, that every article, and instrument that comes in contact with the patient is thoroughly sterilized; in other words, if we use the same methods and exercise the same precaution in the private home that we would in the sanitarium, we will get the same results. If this be possible, then we have overcome the first and main objection to the private room.

Second: The question of trained nurses. The laity exhibits a blind confidence in the trained nurse that is marvelous. I have always found that the best nurses are those who carry out the surgeon's instructions best, regardless of costume. I have never had any difficulty in securing a nurse with sufficient intelligence to do this. When the surgeon can see the patient two or three times each day, and attend to all the dressings himself, it is not so necessary that the nurse be so highly educated or so well trained. After all it is good results that are to be desired.

In order to learn what the mortality really is in operating under such grave surroundings, I took the trouble to address letters to fifteen physicians doing a general work in towns where there are no sanitariums. I received replies from twelve of them who reported sixty-five abdominal sections with one death. They were as follows: Forty-four operations for appendicitis, one death; sixteen ovariotomies, no death; five hysterectomies, no death.

These were not selected cases, such as could go away for operation, but many of them emergency cases. They were not all operated on by the same surgeon, but nearly equally divided among several.

I have not been able to secure statistics from any of our sanitariums, but if they can show a smaller death-rate I would be glad to hear from them.

I know it is difficult to compare results in this particular line of work unless we had a clear record of each individual case. Neither is it a fair test of the surgeon's skill, but it does show that aseptic surgery is not only possible but eminently practicable in the private residence.

It is true that it is easier on the surgeon to have all his cases at the same place, and to have some one else to attend to details, but I, for one, am willing to do all these myself for the fee charged by the sanitarium.

But these splendid equipments and conveniences do not effect results. I claim no advantage for the country residence over the sanitarium, not even that of pure atmosphere, for the old practice of physicians living in cities seems to have been reversed, and instead of advising their patients to go to the country for pure oxygen, they are advised to go to the cities. I have noticed in the advertisement of our best sanitariums every room has a sunny exposure and the ventilation is perfect.

A third argument against the surgeon living in the smaller towns is that only a specialist should undertake such work, and that, by reason of much experience, he is better qualified for such work. If the general practitioner advises his patient to consult a specialist for every disease there is a specialist for, he will soon realize that there will be little left for him to do. I know that it is to the specialist's interest for the people to believe that work in his

particular line can be done better by one doing that work exclusively.

It is also to his interest for the public to believe that it is very dangerous for the general practitioner to undertake so simple an operation as the cauterization of the schneiderian membrane, to say nothing of that very common malady with which most everybody seems to be afflicted, bones in the nose.

If it is dangerous for the general practitioner to do this work, it is wrong for the specialist to say, by his signature to a diploma, that he is qualified to do it.

I desire to report briefly six of my own cases. not because they are especially interesting, but because they were operated on under the so-called dangerous surroundings.

My first case was a woman, aged seventeen; diagnosis, ovarian cyst. On January 10, 1902, I operated on this case, and removed an ovarian cyst, which contained nearly five gallons of fluid. Patient made a rapid recovery. I operated on this case in a cabin with four rooms. I selected the best ventilated room, and for the sum of five dollars and a little work I made it clean. I saw this case twice a day, attended to all the dressing myself, and allowed nothing to come in contact with patient that was not sterilized.

Case No. 2 was a young lady, aged eighteen; diagnosis, appenditicis. On January 12, 1902, I operated and removed the diseased appendix with several ounces of pus. In this case I used gauze as drainage. On the fourth day I removed gauze, closed wound, and patient made a complete and rapid recovery. This case was operated on in a farmhouse made clean under my own supervision at a very small expense.

Case No. 3.—Diagnosis, cystic ovary. On August 14 I operated on this case in a room in a private resi-

dence that I disinfected myself. I removed an enlarged cystic ovary, and patient made an uninterrupted recovery. I attended to all the dressings myself, and where we can do this there is no need of a trained nurse.

Case No. 4 was a young man, aged twenty-two. I saw patient on September 1, 1902, diagnosis appendicitis, and on the same day removed a diseased appendix, closed wound, and patient recovered without a stitch abscess. I did this work under seemingly very grave surroundings.

My fifth case is not a laparotomy, but it presents some points of interest which I would like to hear discussed, and was done in the private home.

On March 20 I was called to see this case with an other doctor. Patient male, eleven years of age. Five weeks previous had a severe attack of pneumonia. On examination I found the heart very much displaced, with the apex to right of median line, complete dullness from the eighth rib to the clavicle; temperature 102 1-2, pulse 120. I diagnosed the case empyema, and suggested an operation,

On March 21 I did the following operation: I made an incision between the sixth and seventh ribs in the axillary line, opening the pleural cavity. I then introduced a flexible metallic probe, with an eye in its point, passed it in to the pleural cavity, made it project between the eighth and ninth ribs, and then cut down on the probe, and passed it out the lower wound. I then attached to it a large drainage-tube, and carried it through the pleural cavity. From this patient I drew off forty ounces of pus, and judging from the dressings shortly afterwards, do not believe I took more than half of it. I feel sure this case was the result of pneumonia.

In acute pleurisy with effusion we have points of very

great interest. We may divide them into cases of acute pleurisy coming on idiopathically from a chill, and cases coming on in the course of acute fevers. I once heard Mr. Treves say that the majority of caught cold cases were tubercular. That the after-history of these cases shows that if the original disease was not tubercular, tubercle became an element in the later history. If this be true, we should be very careful in our prognosis in cases of acute pleurisy, coming on without any other cause than a chill.

The main points in treating these cases are when to draw off the liquid, and how much to remove. We used to be taught two things in connection with this. First, that we should never draw off the fluid until the temperature is down; second, the fluid should never be drawn off in tubercular cases; but according to modern ideas both these injunctions are incorrect.

I believe we should draw off the fluid if it is embarrassing, whatever the cause or circumstances, notwithstanding we are taught not to draw it off where there is tuberculosis of the lungs. Second, how much to draw off. I believe that we should be guided by the pulse and the presence of cough. At the first cough, I blieve we should withdraw the needle. If the quantity of fluid is sufficient to displace the heart, the removal of the entire quantity at one time, allowing the heart to suddenly resume its normal position, together with the removal of the pressure of the liquid, is likely to cause a collapse.

The main advantage in establishing two openings, as I did in this case, is that a drainage-tube is passed through the pleural cavity in its lower portion, and gives perfect drainage, and even in the worst cases of empyema such drainage will result in a cure without the usual fistulæ, which often necessitates an Estlander operation. This case made a complete recovery.

Case No. 12 was an external urethrotomy without a guide. Patient, a young man, aged thirty, ten years ago had gonorrhea and has had trouble in passing his urine ever since. On March 27 I was called and found him unable to pass his urine, very weak, and in a great deal of pain. I made an effort to enter his bladder through the urethra, but was unable to pass the smallest bougie. I suggested an operation, and on March 28 I anesthetized patient and made a median perineal section without a guide. I entered the urethra just behind the stricture. I then introduced a large size rubber tube into the bladder and drew off one-half gallon of urine; then with an Otis urethrotome I did an internal urethrotomy and enlarged the urethra sufficiently to pass a No. 32 sound. This case was operated on in his bedroom and got well.

PUERPERAL INSANITY.

By J. W. PALMER, M.D., Ailey.

Puerperal insanity is a generic term used to include all cases of mental derangement incident to pregnancy and its sequelæ.

I shall not dwell on the symptoms and differential diagnosis of mania and melancholia, but on the relations of insanity mostly incident to pregnancy and its sequelæ. It is too lengthy and tiresome to cover that ground here, when we can find an exhaustive description of it in any standard work on insanity.

Puerperal insanity is conveniently divided into three classes:

First, insanity of pregnancy.

Second, puerperal insanity proper.

Third, insanity of lactation.

The form of puerperal insanity may be mania or melancholia, and sometimes these forms end or pass into dementia. Mania is most always the form of insanity that occurs in puerperal insanity proper. Melancholia is the form generally met with in the first and third classes, and if dementia occurs it is usually in these classes. Mania occurs more frequently than the others. The per cent. of different classes are, insanity of utero-gestation 20% puerperal insanity proper 50%, and insanity of lactation 30%.

Extensive collected statistics from various institutions devoted to the treatment of insanity claim that 7.1% of all cases of insanity of females are due to puerperal origin,

and that the disease develops during the child-bearing process. As to the frequency of puerperal insanity in relation to the number of cases confined, will say that my experience in the lying-in hospitals and asylums while in Baltimore and since I have been practicing medicine proves that we seldom meet with a case of puerperal insanity. Summing up the tabulated cases from the best authors and writers and from the present statistics, it is sufficient to say that one woman out of every four hundred who is confined becomes insane.

There is a form of insanity not considered in the other classes known as *transient mania during delivery.* This is a peculiar form of mental derangement somtimes observed during labor, and called temporary insanity. It is more accurately described as a kind of acute delirium produced in the latter stage of labor by the intensity of the suffering caused by pains. It is most apt to occur as the head is passing through the *os uteri,* or at a late period during the expulsion of the child. It may consist of merely a loss of control over the mind, during which the patient, unless carefully watched, might in her agony seriously injure herself or her child. Sometimes it produces actual hallucinations. This kind of mania, if it may be so called, is merely transitory in its character, and disappears as soon as the labor is over. From a medico-legal point of view it may be of importance, as it has been held by some that in certain cases of infanticide the mother has destroyed the child when in this state of transient frenzy and when she was irresponsible for her acts. In the treatment of this variety of delirium we must, of course, try to lessen the intensity of the suffering, and it is in such cases that administration of chloroform is justifiable and necessary. After this temporary insanity passes off, patient should be kept quiet for some time.

Class 1.—Insanity of pregnancy, which is, without doubt, the least of all three forms. The intense mental depression, which in many women accompanies pregnancy, and causes the patient to take a despondent view of the condition and to look forward to the result of her labor with the most gloomy apprehension, seems to be often only a lesser degree of the actual mental derangement which is occasionally met. In many the attack of insanity can be traced as developing itself out of the ordinary hypochondriasis of pregnancy. A larger proportion of cases occur in primiparæ than in multiparæ. The period of pregnancy at which mental derangement shows itself varies. Most generally it is at the end of the third month, or the beginning of the fourth month. We should not confound aggravated hypochondriasis with insanity of pregnancy, as the former usually lessens after the third month, while the latter only begins after that date.

Sometimes there is a tendency to dipsomania in the early months, which may be an exaggeration of the depraved appetite or morbid cravings so commonly observed in pregnant women, just as the melancholia may be a further development of lowness of spirit.

Prognosis.—The prognosis may be said to be on the whole favorable, though there is little hope of a cure until after the termination of pregnancy.

Causes.—By far the most prolific cause of insanity of pregnancy is an hereditary predisposition to insanity that exists, and the events of pregnancy acting simply as the spark that fires the mind. The morbid dread of pregnancy aids in its causation. Anemia, which comes on gradually, has an effect in producing it. The most recent theories show and claim that toxemia of pregnancy plays an important part, and claim that the toxemia is caused by toxins produced in bodies of mother and child, and retained

because of a lack of excretion or by incomplete metabolism, or by both. These toxins may be the result of chemical decomposition of food and of the waste material of tissue change largely increased by pregnancy. The insanity may be caused by a yet unknown group of toxins which may exist in the body during the period of gestation.

Class 2.—Puerperal insanity *proper.* True puerperal sanity has always attracted much attention from obstetricians, often to the exclusion of other forms of mental derangement connected with the puerperal state. Puerperal insanity proper is the most interesting part of the subject. We may define it to be that form of insanity which comes on within a limited period after delivery, and which is intimately connected with that process, because the mental disturbance, which is usually acute confusional insanity, is due to toxemic infection. Mania is generally the form of insanity met with, but by no means is it the only kind of insanity observed, for there is a considerable number of well-marked examples of melancholia. My experience and the authority of the best writers justify me in saying that all cases of acute mania come on within eight days after delivery, and that all cases of melancholia develop themselves after that period.

It is pretty generally admitted by all alienist physicians that hereditary tendencies form one of the strongest predisposing causes of mental disturbance in the puerperal state. In a large proportion of cases circumstances producing debility and exhaustion or mental depression have preceded the attack, preceded by post-partum hemorrhage, severe and complicated labor, or they may have been weakened by over frequent pregnancies, or by lactation during the early months of pregnancy.

Morbid dread during pregnancy, insufficient to produce insanity before delivery, may develop into puerperal in-

sanity after labor. Shame and fear of exposure in unmarried women not infrequently lead to the disease. The anemia produced by post-partum hemorrhage is a potent factor in producing puerperal insanity. Mental impressions may be the determining cause in predisposed persons. The age of the patient has some influence, and there seems to be a greater liability at advanced ages, especially when such women are pregnant for the first time. The symptoms are intensified by disturbance of the abdominal or pelvic organs. The most recent theories and investigations attribute the causation of the disease to some morbid condition of the blood. The possibility and probability of the acute form of puerperal insanity, coming on shortly after delivery, being dependent on some form of septicemia is one that deserves most careful consideration and investigation on this subject. There are several theories advanced as to the dependence of the disease being due to some morbid condition of the blood. Some advance and advocate the uremic blood-poisoning theory, while others claim it is due to hepatic insufficiency.

Puerperal infection or toxemic infection is the direct cause of puerperal insanity, based on the following reasons: That puerperal insanity occurs in the great majority of cases within the first ten days after delivery, the same period during which puerperal infection usually occurs. It is generally accompanied by elevation of temperature and other evidences of febrile disease. The clinical form in which puerperal insanity manifests itself is in most cases that of acute delirious or confusional mania, closely resembling febrile delirium. The death-rate is much higher than in simple mania, death occurring from exhaustion, usually high temperature and rapid pulse.

Post-mortem examinations though apparently infrequent in these cases, have shown grave involvement of the pelvic

organs. Examinations of the pelvic organs during life show lacerations of the perineum and cervix uteri, which are the channels of infection in the puerperal woman. Sometimes there are secondary conditions found, such as intrapelvic inflammations and consequent abnormal locations, fixations and congestion of the uterus, tubes and ovaries. It should be borne in mind that in each individual case many factors are indissolubly associated, the patient's mental breakdown being the result of several complex conditions, each reacting upon and intensifying the other. I think that the renal and hepatic theories are fallacious, but do believe they have some weight in producing the disease, because effect of faulty elimination of secretion altered in quality and quantity plays an important rôle in the production of the unstable nervous system of pregnant women, so we find incapacity of liver to perform the work thrust upon it and failure of skin and kidneys, all of which certainly can and do induce faulty nutrition of the brain. There are many facts, as statistics of recent years show, to support the belief that I have advocated, that sepsis is by far the most important cause of puerperal forms of insanity. But it is strange that no one has as yet ventured to assert that all puerperal cases are due to intoxication from either bacteria or toxemic organic compound. In short, I venture to say that *the hereditary taint and morbid predisposition are the true causes of the disease, the puerperal condition being its immediate and exciting cause.* Recent advances in bacteriology warrant the belief that some day proof will be abundant of the universal belief that either toxemic or septic infection is a primary factor in all psychoses of childbirth. In no class of cases are gynecological investigations of more importance than in the study of the causation of puerperal insanity.

Diagnosis.—The diagnosis of puerperal insanity cannot be made from the symptoms. It is not a special variety of insanity symptomatically, but etiologically.

Prognosis.—The prognosis is favorable; 75 to 80 per cent. recover, but a larger proportion die of exhaustion.

In no class of cases of insanity is the prognosis so favorable as those of puerperal origin. The disease may resolve itself into a consideration of immediate risk to life and of the chances of ultimate restoration of the mental faculties. It is an old aphorism "that mainia is more dangerous to life and melancholia to reason." Extreme rapidity of the pulse is indicative of a fatal tendency. If pulse 120, conditions grave, but as long as pulse remains below 100 no immediate danger. Should there be development of phlegmasia dolens, the prognosis is exceedingly grave. The most dangerous class of cases are those attended with some imflammatory complication, with marked elevation of temperature.

Duration.—The duration of the disease varies considerably, generally getting well inside of three months, but melancholia generally lasts longer than mania.

Class 3.—Lactational insanity. It is a mental disturbance occurring during the period of lactation, usually coming on from six weeks to ten months after labor; the form of insanity is generally melancholia, and occasionally you meet with confusional insanity, which is much more transient than in true puerperal insanity. There seems, however, to be more risk of the insanity becoming permanent than in other forms. Sometimes the melancholia degenerates into dementia and the patient becomes hopelessly insane.

Etiology.—Hereditary taint is an important factor in producing this form of insanity, as in the other forms. Prolonged or excessive lactation is considered the chief

cause in producing lactational insanity. Careful inquiry, however, shows that certain conditions favoring toxemic infection are often present, as a mammitis or mammary abscess sometimes precedes the mental disturbance. Defective uterine involution is considered as a factor. Lacerated cervix and endometritis have been found present in some cases. Its dependence on causes producing anemia and exhaustion plays an important part. Retained placenta, I believe, has force in producing it, as in a case I treated with lactational insanity. I found her with discharge and placental retention six weeks after labor. The toxemic effects from this retained placenta in said case, giving rise to slight febrile condition, prove that toxemic conditions are important factors in producing lactational insanity.

Diagnosis.—The occurrence of confusional insanity during the nursing period is the only diagnostic feature. There is nothing distinctive in the symptomatology. Three or four per cent. of all cases of insanity in women occur during the nursing period.

Pronosis.—Prognosis is moderately favorable; from forty to fifty per cent. recover. The danger to life is not great if the cause producing debility be recognized and at once removed.

Mania and Melancholia.—The symptoms of these forms of insanity are practically the same as in the non-pregnant state; consequently I will dwell only on the symptoms peculiar and incident to puerperal insanity, for you can find very extensive description of the symptoms in any standard work on insanity. Mania, more frequently than melancholia, and occurring generally in puerperal insanity proper, almost always comes on in the first week of the lying-in period. It is almost always related to certain well-known symptoms of puerperal sepsis. Fever

nearly always present. There may be prodromic symptons. Changes in the quantity and character of the lochia are present. The outbreak usually begins with excitement, rapidly ending in incoherence. The usual feelings are perverted. The patient may have attacks of violence, during which attempts are made on the life of the husband, the newly-born babe or other children, if any.

These symptoms often have a religious basis; at other times they are based on delusions of jealousy. Usually the hallucinations and delusions of the patient are of a sexual character. The most refined women will surpass the imagination of the most degraded in their obscenity and vulgarity of language and actions. The eyes are bright, face pallid, pulse quick, tongue dry and furred, bowels mostly constipated, urine high colored and scanty and appetite uncertain. They will sometimes try to swallow anything, such as bedclothes, and will try to gouge out their own eyes. The patients often seem dissatisfied with their attending physician and nurses. They will often yield to suggestions and treatment of physician on first visit, though no longer, but beg for another physician. I experienced this in treating one case in which she became dissatisfied and absolutely refused to follow any of my directions, or take one dose of medicine from me. Another physician was called in; after his first visit he was treated likewise, and the third physician was called, and after his first visit he received like treatment. Motor excitement is common. Some desire to remove their clothing, in some probably a desire to expose the body to view, while in others it is probably due to hallucination of common sensation, rendering the weight or pressure of the clothing unbearable.

Melancholia.—This most commonly occurs in utero-gestation and lactation, and is often preceded by cephalalgia,

tinnitus aurium and flashes of light before the eyes, and other indications of debility when it comes on during lactation. But when in utero-gestation, the accompanying delusions are generally exaggerations of the anxieties and whims of pregnancy. The advent of melancholia is more gradual. It may commence with depression of spirit without any adequate cause, associated with insomnia, disturbed digestion, headache, and other indications of bodily derangement. Such symptoms, showing themselves in women who have been nursing for any length of time, or in whom any other evident cause of exhaustion exists, should never pass unnoticed. Soon the signs of mental depression increase and positive delusions show themselves. In some cases, which approach in character those of mania, there is considerable excitement, rapid pulse and furred tongue and much restlessness. Acute cases of melancholia, coming on during puerperal state, most often assume this form. In others there are less of these symptoms; the patient sits for hours without speaking or moving; but there is not much excitement, and this is the form most characteristic of insanity of lactation. There is always a strong tendecency to suicide, and it should never be forgotten in melancholic cases that it may develop itself in an instant and that a moment's carelessness on the part of the attendants may lead to disastrous results.

Treatment.—The indications for treatment are to check profuse, exhausting discharge, to support the patient's strength and to insure perfect quiet. With the first sign of trouble the child should be taken from mother's sight and breast, liquid food should be given at frequent intervals, care should be taken to keep the bladder and rectum empty, the room should be darkened and its temperature should be regulated. We must calm the excitement and

give rest to the brain. In acute mania there are three important things to do: We must seek and remove the cause, bearing in mind that puerperal insanity is an infectious pychosis; the local source of infection should be sought out and removed, if possible. In some cases there is simple sapremia due to absorption of septic materials from the birth canal. In others there is septicemia. In short, will say treatment is the same as in puerperal fever without insanity. Streptococcic serum and intravenous infusion of formalin are used and advocated by some, but I have had no experience with them. Patient should have plenty of nourishment. If no febrile condition, give solid food as long as you can, but if any febrile condition, only give liquid food; but soon as possible give solid food, as it is much better. Give the liquid food frequently and in small quantities; if patient refuses to take food, give it to her forcibly. Alcoholic stimulants should be given to the fullest extent, when well borne.

At the onset a good purgation is beneficial; after that it is harmful, but the liver and bowels should be kept in good condition by giving mild laxatives. When diuretics are indicated, give potassium acetate and infusion digitalis. The heart should be watched and its strength maintained by small and repeated doses of digitalis, so as to keep the brain well nourished. Opiates should not be given unless when in severe pain, as in cellulitis, for it has adverse action on the secretions. To produce sleep and calm the patient, of all remedies, chloral hydrate stands first, and given with potassium bromide, its hypnotic action is increased. Trional is a very reliable drug for maniacal excitement and insomnia, given in doses of thirty grains every two to four hours to produce sleep and quiet patient, but must watch bowels and heart. I have

found nothing to control the excitement better than hyoscin hydrobromate given by hypodermic in doses from 1-100 to 1-60, repeated once or twice daily, watching its effects. When patient convalesces should have a good tonic; change of air and scenery. There should be secured for patient rest, sleep, nutritious food and a daily evacuation of the bowels, and little by little she should be brought back to old habits and the responsibility of existence.

SMALLPOX AND ITS SATELLITES.

By F. M. BRANTLEY, M.D., Senoia.

Owing to similarity and the near kinship of these infectious diseases, it is a matter of great importance that every physician should always be able to make a differential diagnosis. Without it there is a vast amount of suffering as well as the loss of many lives. Because of the little danger of varicella or chicken-pox the doctor may be led to give but little attention to it, thereby being led astray in his conclusions, leading the community into the irreparable consequences of a smallpox epidemic. The kinship and similarity of these diseases are calculated to mislead careless observers, and unless they are well understood in the early stages may result in disaster and untold misery.

It is my motive in this paper, if possible, to place a safeguard around the community and to call the attention of the profession to its importance, as well as to the importance of vaccination, which renders many entirely immune, and divests smallpox of its horrors and renders it almost harmless. Varicella, as some of the old writers believe, is one species and varioloid another of the same family. A careless observer may easily be led to pronounce varioloid varicella, or to pronounce varicella varioloid. Thereupon rests the vital issue; because varicella is comparatively harmless, while varioloid is per se variola in its milder form. Their similarity is so near that it requires close scrutiny to discern to which class it belongs, whether to variola or to varicella. Varicella might be termed a spurious smallpox, and is also an infectious disease but of shorter duration, and its habitude is just beneath the cuti-

cle, not involving the cutis vera; vesicates and stops short of pustulation, is content to vesicate and then dry up, leaving a dried-up scab and broken cuticle which falls off in eight or ten days, rarely leaving permanent impressions. While variola and varioloid in the early stages bear great similarity to varicella, yet there are some distinctions too plain, differences that will bring censure on the doctor who fails in correct diagnosis.

The question of diagnosis is of too great importance to be lightly considered. The doctor had better be outlawed for a time than to mistake in this matter, than have many horrid cases and deaths on his hands to answer for. We are all aware that varioloid is nothing but variola modified in effect but not in contagion; so it matters not whether from variola or from varioloid, the same effects follow. A case infected by varioloid may be confluent all the same as if from variola. So we conclude that every doctor should in the beginning prepare himself especially to discriminate these diseases and should be held responsible for any mistakes in this direction, and should always hold himself ready to attend any smallpox cases that come in his immediate jurisdiction, rather than shirk, to give place to some adventurers who are always ready to fleece any community afflicted with this loathsome disease.

Now a few words on the differential diagnosis. My old adage, "that early diagnosis saves its thousands," will marvelously apply in smallpox. At the starting point lies about all that there is in the treatment.

Variola has some indescribable appearances that require experience to discern, but enough symptoms do appear in its early stages to put us on our guard, so as to give time for isolation before the stage of infection. In all sporadic cases my experience is that it does not infect until pustulation on the fifth or sixth day after vesication begins. Nature has provided us the opportunity to avoid the

spread, provided we are sagacious enough to utilize it. "The wise seeth the evil and hideth from it." Variola exhibits among others one certain prominent characteristic that varicella does not, that is, the vesicle stage is always found at the base of each vesicle, is the rudimental shotlike substance in the skin which is deep down in the cutis vera, and is the foundation for the pustule to follow, involving the palms of the hands and soles of the feet. These are never found in varicella.

The course of variola is good for three or four weeks because the pustules, anthraxlike, require time to throw off the dead tissue by replacing new tissue, beginning from below.

I am not prepared to give the etiology of this disease, but from all appearances I am led to look to bacteriology for its origin and cause. Variola (unlike most skin diseases which require stimulants and diaphoretics to develop the eruption) requires the opposite treatment to keep it from coming out, lest you get more than you bargain for and produce a confluence, the thing above all to be dreaded. The fewer vesicles you have the lighter the case, and hence we would emphasize that no stimulants must be allowed, no heating, in or out, but cool drinks, light diet and mild antiseptic laxatives, this line to be strictly observed in the early and formative stages. Tonics may be needed in the latter stages. On account of impairment of the skin, especially the face, many are the local paraphernalia used to prevent pitting. I confess I have little faith in specifics, but reason would suggest antiseptics, in their multiplicity, used with discretion, may partially ameliorate the aftermath.

As to the cause and antiquity of smallpox, it has a savor of satanic invention, as is illustrated in the poem of Burns:

D'ye mind that day when in a bizz
W'i reekit duds and restit gizz
Ye did present your smooty Phiz
Mang better folk,
An' sklented on the man of Uz
Your spiteful joke,
An' how ye gat him in your thrall,
An brake him out of house and hall
While scabs and blotches did him gall
With bitter claw.

Smallpox is not confined to humanity alone, but also affects inferior animals, more especially the cat and the dog, which I have seen exemplified in typical cases in the pest-house. The roving nature of these animals may lead to the spread of this disease to both man and beast.

OSTEOMYELITIS.

By HOWARD J. WILLIAMS, A.M., M.D., Macon.

Notwithstanding the fact that the advances in pathology and bacteriology of recent years have so immensely influenced the treatment of acute osteomyelitis that the large majority of surgeons now recognize the importance of early radical interference, this infectious process still remains one of the most serious and destructive diseases of childhood. This is due to the fact that the family physician, he who first sees the case, fails to recognize the early indications of a lesion whose signs and symptoms are characteristic of no other disease in childhood, and are but rarely assumed by the diseases of adult life. For this reason, I trust I will be pardoned for presenting the records of seventeen cases of this not uncommon germ infection.

Ten of these cases were treated in private practice and seven in the hospital. There were thirteen white patients and four colored cases. Fifteen of the cases were in children under sixteen years of age, and two were adults over twenty-five years old; the youngest patient was two months old, and the eldest was fifty-six years of age. Nine were females and eight were males. The disease was present in the upper extremity in five patients, in the lower limb in eight, and in the lower jaw in four; the humerus, the femur and the lower jaw were most frequently involved. A history of a trauma, varying in intensity, was present in eight of the cases; it followed previously existing disease in three instance; exposure and over-fatigue accounted

for its presence in three others; and in four cases it was the result of decayed teeth. Eight of the cases were seen early enough to do conservative operations; in the remainder, late operations were necessary. No deaths occurred. The following summary embraces the salient points in each case.

Case 1.—Private practice. S. B., aged eighteen months, white, female. History of an abscess on the back of the neck, lanced November 10, 1897. Ten days later acute osteomyelitis developed in the upper end of the right humerus, attended by exhaustion, fever and diarrhea. November 29, under chloroform anesthesia, humerus exposed from the greater tuberosity to the deltoid insertion, bone opened and curetted; drainage and iodoform packing employed. Staphylococcus aureus in the pus. Recovery complete in four weeks.

Case 2.—Hospital practice. G. G., aged eight years, white, female. History of a fall bruising the right shoulder. A few days later an exposure to sudden changes in the weather was followed within a week by acute osteomyelitis of the humerus. Treated for rheumatism for three months, during which time sinuses formed. July 24, 1900, under ether anesthesia, humerus was exposed by an incision extending from the greater tuberosity to the condyles, and a sequestrum consisting of the entire shaft from the upper to the lower epiphyses was removed. The periosteum and skin were united without drainage; the limb was dressed with heavy antiseptic dressings and placed on a straight splint. Primary union occurred; the shaft of the humerus redeveloped within four months, except about an inch at the middle of the bone. Recovery with a useful arm, using a leather brace to encircle the limb from the axilla to the elbow.

Case 3.—Private practice. L. H., aged fifty-six years,

white, female. History of a severe bruise of the right shoulder or arm. Three weeks later a chill, and osteomyelitis developed. Treated for ten days as erysipelas. An abscess under the deltoid muscle was opened; the periosteum was found separated from the humerus and sequestration in progress. The pus contained staphylococci. Later her physician removed a small sequestrum. Recovery promptly followed.

Case 4.—Private practice. J. B., aged twelve years, white, dirt-eater; had chronic malaria, with enlarged spleen (probably uncinariasis). History of an uncomplicated fracture of the lower end of the left humerus followed by acute osteomyelitis, with suppurative synovitis of the elbow joint. November 28, 1889, anesthetic ether, amputation in the upper third of the humerus. Primary union.

Case 5.—Private practice. M. M., aged eleven years, white, female. History of simple fracture of the lower third of the left ulna, followed by chill, acute osteomyelitis and discharging sinuses. July 1, 1898, under chloroform anesthesia, removal of the entire necrotic shaft of the ulna, preserving the epiphyses, through an incision extending the length of the forearm. Periosteum and skin closed without drainage. Primary union. Evidences of reformation of new bone were present within five weeks. Present condition, five years after operation: Ulna of the same size as in the healthy extremity, and perfect functional use of the forearm.

Case 6.—Private practice. W. G., aged twenty-six years, white, female. History of typhoid fever followed six months later by osteomyelitis of the right femur after fatigue and exposure. June 18, 1891, under ether anesthesia, a deep incision released a quantity of pus from beneath the femoral muscles; the periosteum was found separated from the bone by pus, which also escaped when

Case 10.—Hospital practice. J. P., aged twelve years, white, male. History of empyema of two months' duration, for which, March 24, 1902, simple incision and drainage was employed under local anesthesia. Streptococci were present in the pus. Two weeks later he had a parotid abscess and a phlebitis of the left femoral vein. Finally osteomyelitis of left hip, left ankle, and occipital bone developed. May 31, in the Macon hospital, under ether anesthesia, the upper end of the femur was exposed, and the head of the femur was found to be separated from the shaft at the epiphyseal junction. Excision was performed just below the greater trochanter, the periosteum and muscular attachments being preserved. The lower end of the left fibula was exposed and five inches of the shaft were found necrotic, the lower epiphysis not being diseased. This diseased bone was excised and the periosteum, covered with heavy granulations, preserved. The diseased occipital protuberance was curetted at the same operation.

After a tedious convalescence he went home July 9, and began to use crutches.

Finally he had a recurrence of the empyema, for which, October 6, I resected several of his ribs, under nitrous oxide and ether. Present condition: the lower end of the left fibula is now fully up in size to the sound one and a good artificial hip-joint is established.

Case 11.—Hospital practice. E. G., aged nine years, mulatto, female. History of chill and acute osteomyelitis of the upper end of the right tibia, after a prolonged exposure to the sun. Treated at first for rheumatism. Three weeks after the initial chill, she was brought to the Macon hospital in an intensely septic condition, fluctuating knee-joint and a discharging sinus leading to an epiphyseal separation of the head of the tibia. July 23, 1901, ether being employed, amputation in

the lower third of the femur was performed. Recovery in ten days.

Case 12.—Hospital practice. J. W., aged fourteen years, negro, male. History of a severe illness two months preceding admission. Treated at first as rheumatism of the right knee-joint; finally sinuses formed on the upper and middle parts of the leg. October 7, 1902, under nitrous oxide and ether anesthesia, the shaft of the tibia was exposed by an incision nine inches long, and groove through the involucrum was made with chisel and mallet, exposing a suppurating cavity, containing a sequestrum the length of the skin incision, which was removed; iodoform emulsion poured into the cavity and the periosteum and skin closed, with drainage. After a slow convalescence the boy is now walking on the leg.

Case 13.—Private practice. I. F., aged eight years, white, female. History of a continued fever in the fall of 1884. May, 1885, a needle broke off in the left heel, causing pain and fever; August, 1885, a suppurating sinus, leading down to the os calcis was present; advised that necrosed bone be curetted; declined. November, 1885, osteomyelitis of os calcis and astragalus; excision of these bones advised and declined. February 22, 1886, entire foot and lower ends of tibia and fibula diseased, and general infection present. Condition such that amputation in the middle third of the leg was performed under ether. Primary union and rapid recovery.

Case 14.—Private practice. K. B., aged nine years, white, female. History of a decayed tooth in the lower jaw, which the family dentist refused to extract, followed by acute osteomyelitis of the right side of the body of the inferior maxilla. Brought to Macon February 1, 1886, with severe general infection, high fever, delirium, expression of fright, and sinuses into the buccal cavity

and at the angle of the jaw externally. Operation under ether, February 2; removal of necrosed body of the right inferior maxilla from the mental process to ramus with all of the right lower teeth. Recovery with permanent facial deformity, but a functionally useful jaw.

Case 15.—Private practice. E. C., aged ten years, white, male. History of swollen lower left jaw and a decayed molar tooth which his dentist refused to extract, followed by osteomyelitis of six months' duration. October 19, 1900, under ether anesthesia, free incision down to the dental foramina, opening up the medullary canal, and removal of a sequestrum, with the decayed root of the offending molar. Primary union.

Case 16.—Hospital practice. J. M., aged fourteen, negro, male. Osteomyelitis of the jaw of two weeks' duration, attending the decayed root of a molar. High leucocytosis. April 5, 1901, under chloroform anesthesia, incision over the right inferior dental foramina, periosteum thickened and reddened and a drop of pus exuding from the foramina. Maxilla trephined and a quantity of pus escaped; decayed root of the tooth removed, external wound closed without drainage. Streptococci and staphylococci present in the pus. Primary union.

Case 17.—Hospital practice. C. T., aged eight years, negro, male. Osteomyelitis of the lower jaw, with a sinus of two months' duration. July 8, 1902, ether employed, incision along the base of the right lower maxilla; dead bone and the root of a decayed molar were removed from a suppurating bone cavity. Primary union.

Acute osteomyelitis is essentially a germ infection, not a specific disease of bone tissue; nor is it dependent upon the presence of a characteristic micrococcus peculiar to the disease, as Becker (1) supposed, but is the result of the migrations of any of the pus-producing

organisms—staphylococcus, streptococcus, pneumococcus, colon bacillus, bacillus typhosus, or other germs. Lannelogue (2) in thirty-five cases found staphylococcus twenty-eight times, streptococcus three times and other germs four times. Of the seventeen cases I report, staphylococci were present in five (cases 1, 3, 7, 8, 9), once streptococci alone (case 10), and once streptococci and staphylococci (case 16) existed together in the same infection. The presence of these germs was not accidental or from outside contamination; they were found in the pus discharged after aseptic incisions into the infected depots in the bones. One case, the pus of which unfortunately was not examined (case 6), I am sure was dependent upon the bacillus typhosus.

This septic process is almost exclusively a disease of the period of bone development and growth, beginning, with but few exceptions, in the growing tissues in the end of the diaphysis near the epiphyseal cartilage on the side remote from the joint in childhood. Townsend (3) states that of seventy-three cases under his observation all but four occurred in the first years of life, one half of these during the first months of infancy. Pickering Pick (4) says it is not surprising that any slight cause should drive a physiological activity into a state of morbid excitement at this time of life, owing to the highly vascular conditions existing in the embryonic tissues in process of development in this situation. The rarity of the disease in adult life, Max Jordan (5) explains, by the fact that the special conditions predisposing to disease during the growth of bone tissue having ceased to exist, some unusual violence or some great depression of the vitality at this age becomes necessary for its development. Fifteen of my cases were in children, and in eleven of them the process was in the diaphysis near the epiphyseal cartilage.

The disease is generally a secondary process in a purely bacterial form of pyemia, in which trauma usually plays the part of an exciting cause. Edmund Owen (6) says: "There are possibly some streptococci or staphylococci constantly lurking in the blood of all children, and also of adults; these only need a certain lowering of the vitality to proliferate in a particular spot, this local condition being brought about by a kick, a blow, a wrench or an overexertion." This may explain many of those cases in which no primary focus of infection can be found, but which are preceded by fatigue. In one of my patients (case 9) the disease started after the lad had rested for a time on the ground, overheated and exhausted; in another (case 11) it followed immediately after a prolonged walk in a July sun. Again, it is claimed by Warren (7), Park (8) and others that the ports of entry for the germs may be the alimentary canal and the respiratory organs, most probably the tonsils or pharynx. In those cases occurring in the winter months or dependent upon sudden changes in the weather, tonsillar infection will explain the conditions. One case I report (case 2) had the disease to develop in the humerus after a severe cold. Slight infections of the skin, abrasions or furuncles may be the points of entry of the germs; Tillmanns (9) states that the skin is the most frequent source of infection. In a child of eighteen months (case 1) it followed an abscess which had been lanced ten days previously. The disease is not uncommon in the new-born, the primary focus, both Park (8) and Holt (10) claim, being suppuration of the umbilicus. A babe two months old (case 7), with a suppurating umbilicus, developed an osteomyelitis of the femur after a slight traumatism. Infection around decayed teeth, Schede (11) and H. R. Wharton (12) both state, is a most frequent source of osteomye-

litis in the lower jaw, the former claiming that this is a most dangerous location for the disease, four of eleven of his cases proving fatal. Four of my cases were in this location. Particular attention should be drawn to this condition, since the modern dentist is very averse to extracting decayed teeth in children. In two of my patients (cases 14 and 15) a timely extraction, I am confident, would have saved permanent disfigurement. Osteomyelitis is frequently a sequela of the acute infectious fevers, scarlet fever, measles and typhoid fever. Keen (13) reports one hundred and sixty-six cases following typhoid infection. Paul Klemm (14) claims that in this complication both the typhoid bacillus and some pyogenic cocci are found in the exudations; this H. C. Parsons (15) doubts to be true in all cases. In two cases (cases 6 and 13) a history of a preceding attack of continued fever was present; in neither of these, however, was the pus examined microscopically. Empyema is not infrequently followed by bone infection; in a case of multiple infection (case 10), a preceding empyema was the cause of the disease.

That trauma plays an important part as an exciting cause of the infectious process in bone tissues must be largely recognized. Traumatism was present in eight of the thirteen cases I have reported occurring in the long bones; in three of these (cases 7, 10 and 13) the trauma was combined with a recognized previously existing infectious process as an exciting cause. In the case following empyema (case 10), the trauma seems to have been the result of a persistent decubitus, the patient remaining constantly on his left side, the points of greatest pressure, the lower end of the left fibula, the left hip, and the occipital protuberance, being simultaneously affected. The traumatism need not be neces-

sarily of marked presence; in childhood this is particularly true; in adults, however, the traumatic cause is usually severe. In an adult case (case 3) a violent fall on the arm was the exciting cause, sufficiently severe evidently to produce a thrombosis of the vessels in the nutrient canal. In grown people, sufficient injury must occur to start up a reorganization or repair of the bone tissues before the necessary nidus for the proliferation of the germs is provoked. P. Klemm (14) has demonstrated this fact experimentally. Injecting pyogenic cocci into the tissues of uninjured adult rabbits, no inflammation of the bone would occur, but upon fracturing the thigh of a full grown rabbit and then injecting the germs, osteomyelitis would follow in the broken femur.

Osteomyelitis is most frequently confined to one of the long bones; the short and flat bones also suffer at times. Hahn (16) places the percentage of the short and flat bones involved at 7.7 per cent.; Frohner (17) places it at one flat to fourteen long bones. In four of my cases the disease existed in the lower jaw; in one (case 10) it was present in the occipital bone. The infection is rarely multiple. Funke (18) states that of six hundred and sixty-four cases, multiple osteomyelitis occurred only thirty-seven times. Two of my cases (cases 9 and 10) had multiple foci of infection. In one of these (case 9) the disease subsided or remained latent in one bone for several months and then redeveloped. Poucet (19) claims it may cease to be active and remain latent at some point for years, citing two cases latent in the humerus after being acutely active in the tibia.

In the discussion of my subject so far, I have devoted some considerable attention to the questions of location, causation, and other etiological factors, for they are essentially involved in the consideration of the symptomatology and diagnosis of the condition.

Osteomyelitis being essentially a septic process, the constitutional symptoms will of course be identical with those of septic poisoning occurring in any other location. An initial chill usually begins the attack, followed by early high temperature, remaining more or less regular in staphylococcus infection, soon becoming irregular, according to Lannelogue (2), when the streptococcus is the active germ. Delirium is almost a constant symptom in the rapidly developing cases. Warren (7) calls attention to an expression of fear or horror on the countenance in severe cases (cases 10, 14, 15); sometimes stupefaction may take its place (cases 8, 12). Early and rapid exhaustion, soon assuming a typhoid type, is a constant symptom. Diarrhea is a not uncommon symptom in infants (cases 1, 7). Enlargement of the spleen is present in many cases. Warren (7) and Park (8) insist on the presence of this symptom in all cases (cases 8, 9). Pain is an early and constant symptom; vague at first, but quickly becoming agonizing, it is characteristic in its location in or near the extremity of the infected bone, and is always intensified by disturbance or movement of the neighboring joint. Cheyne (20) claims that if the infection is in the leg, tapping the foot excites severe paroxysms of pain (case 10). Localized tenderness at the seat of the infection is also universally present.

The local signs of the disease are as follows: Muscular spasm or contracture, causing postural signs, appears very early (cases 1, 7, 8). A redness or rose-colored discoloration of the skin over the infected bone is an early manifestation. This discoloration does not correspond with the deep yellowish-red of the skin in erysipelas; nor does there exist late in the attack the characteristic network of cutaneous veins, according to Arnaud (21), commonly found in tuberculous involve-

ment of the epiphyses and joints. Edema or pitting of the deep subcutaneous tissues above or below the seat of the bone infection early in the case, Park (8), Warren (7) and Cheyne (20) say, is pathognomonic of acute osteomyelitis. Kuster (22) mentions another sign which he says is pathognomonic; that is, central swelling or thickening, an edema of the periosteum felt on deep pressure (cases 1, 7, 8, 16). It begins near the epiphyseal junction and spreads downwards as the case advances. Fluctuation, deeply situated, is a rather early sign, generally within the first week and follows central swelling (cases 9, 10, 11). It is dependent upon the accumulation of pus confined between the periosteum, and usually attends, according to Park (8), Tillmanns, (9) and Arnaud (21), epiphyseal separation. Lannelogue (2), Tillmanns (9), and Cheyne (20) call attention to the fact that signs of thrombosis and other metastatic affections may exist, and are charactertstic of an intense general infection; they are usually found in those cases depending upon a streptococcic infection, or in cases following empyema (case 10). Scarlatinal eruptions, due to the absorption of the ptomains attending the proliferation of the micro-organisms, sometimes appear, and may cause a faulty diagnosis. Albuminuria is another evidence of ptomain absorption which is rarely absent in osteomyelitis.

The examination of the blood in osteomyelitis is simply of confirmatory value; in the differentiation of the disease it is of comparatively little value, especially in infancy. In infants marked leucocytosis is often present irrespective of diseased conditions. In children the eosinophiles always run higher than in adults. While according to both Cabot (23) and Ewing (24), in other suppurative processes, skin diseases and severe articular rheumatism, leucocytosis may be high, polynuclear cells

abundant and eosinophilia variable, the presence of myelocytes of course adds to the suspicion of disease in the medullary canals. Blood examinations were made in several of the cases I report. In only two (cases 6 and 16), however, the sole value of the findings was to confirm the histories of the cases.

The diseases most frequently mistaken for osteomyelitis are deep-seated cellular abscess, erysipelas, typhoid fever and acute rheumatism. Neither of these diseases ever causes the fearful destruction which this acute bone infection produces, and for this reason it is unfortunate that their symptoms may at times resemble those of the more serious affection.

Deep-seated abscess rarely gives rise to trouble or to violent constitutional symptoms; the location of the abscess can usually be demonstrated as existing in the intermuscular spaces away from the bone; while there may be limitation of motion, the postural signs of osteomyelitis are absent, and tapping the foot will not excite pain if the abscess is in the leg.

Close examination for central thickening will exclude erysipelas. In this disease there is no characteristic boring pain felt deeply in the extremity, but the feeling is one of tension and burning in the skin itself; tapping the foot causes no paroxysms. In the area of discoloration, which is usually sharply circumscribed, there may be seen minute or large vesicles. The disease is self-limited, and the tendency is to recovery, while osteomyelitis grows progressively worse.

Only when osteomyelitis begins insidiously or typhoid fever is ushered in very acutely should these two diseases be confounded. Lesions of the bones complicating typhoid are usually late sequelæ; while central swelling and deep-seated boring bone pain, aggravated by tapping the foot, are not characteristic of typhoid fever.

Acute articular rheumatism seems to be the disease which gives the greatest confusion. Rheumatism, however, rarely begins so acutely as does osteomyelitis; it is not so painful, the temperature rarely rises so high or so rapidly, nor is it septic in type; neither does a typhoid condition attend the disease early in the case. The swelling is limited to the joint, while in osteomyelitis swelling and pitting are confined to a spot located away from the joint; the pain in rheumatism is not in the shaft of the bone, nor does tapping the foot excite the agony which attends bone infection. Two differential points between these diseases should be carefully remembered. First, rheumatism is usually a multiple involvement, several joints being affected at the same time, while osteomyelitis rarely involves more than one bone. Secondly, osteomyelitis is a disease almost absolutely confined to childhood; acute articular rheumatism is rarely found in children and is almost unknown in infancy. Holt (8) says: "Rheumatism in infancy is so rare that in diagnosis it may be practically ignored;" also, "A typical attack of rheumatism, such as is seen in adult life, with sudden onset, high temperature, severe inflammation of several joints, profuse acid perspiration and occasional delirium, is rarely seen in a child eight or ten years old." In an experience of twenty-two years, eighteen of which were spent in an active general practice, I have never seen a case of acute rheumatism in a child, but I have seen the tragedies resulting from confusing osteomyelitis with rheumatism.

In arriving at a diagnosis of osteomyelitis two factors go hand in hand, which should never be lost to sight. First, there is a history of some preceding infection, insignificant or grave in character; secondly, a history of some form of traumatism will be elicited if carefully sought for. In eighty per cent. of the cases, the two

conditions will be found to coexist. In the other twenty per cent. one or the other will either be present or has existed.

The prognosis of the disease is pitiable in the extreme. Usually it is only the fulminant cases that die, death taking place often within the first forty-eight hours, due to an overwhelming septic infection. The mortality is not so great in the less violent conditions, but if the disease is not recognized, or is improperly treated, the usual results are necrosis, ankylosis, contractures, destroyed function and a lifetime of deformity and mortification.

Osteomyelitis is most distinctly a surgical disease. There is no other preventable disease in which purely internal medication is so utterly unavailing, while almost every case immediately recognized and promptly treated by surgical methods can be saved from disfigurement and permanent disability. Delay means disaster. Kuster (22), in 1881, in the early days of the modern operative treatment of the disease, presented the following very suggestive statistics: Of twenty-four cases operated on, fourteen in the first two weeks, nine healed without fistula, five with fistula and none died; three in the third week, one recovered with fistula and two died; three in the fourth week, one had fistula and none died; four in the fifth to seventh week, one had fistula, one ankylosis, and two died. Of the cases I have operated on in the first two weeks of the affection (cases 1, 3, 6, 7, 8 and 16), all recovered without fistula, ankylosis or loss of function; one, however (case 7), five years after operation, has some arrest of development or shortening of the femur, a not unusual result of the disease in very young children. Herbert Page (25), T. S. K. Morton (26), Edmund Owen (6) and others urge that the operator should not wait for the formation

of pus, but should open the edematous thickened periosteum and trephine or chisel the bone immediately; the bloody infiltrates, full of pus cocci, found in the softened injected bone, thereby escaping, life will be saved, pain relieved, and early restoration of function result. Karewski (27) reports that in fourteen children in whom he employed this method, the constitutional symptoms immediately subsided, the bone tissues recovered rapidly without sequestration, and there was no loss of function or deformity. In two cases in which I pursued this plan (cases 7 and 16) similar results followed.

Should the opportunity have passed for doing an abortive or early operation, that is, when the necrosed bone has been loosened from its periosteal sheath and before it has been shut in by a deposit of new bone, then an intermediate operation may be done with fairly good results. This stage is reached about the seventh to the eighth week. Cushing (28) calls this the regenerative stage and says that the periosteum is then most active; it is covered with granulation tissue full of fibroblasts, osteoblasts and small trabeculæ, in which lime salts are beginning to be deposited. If at this stage the sequestrum be shelled out aseptically, the periosteal wound being immediately closed, regeneration of the bone will take place from the periosteal sheath supported by an aseptic blood-clot. In three cases (cases 2, 5 and 10) I employed this method with complete success in two and a partial success in the other.

When this stage of active regeneration has passed and an involucrum has been deposited around the necrosed section of bone, then a sequestrotomy will have to be performed. Schede (11), in Europe, and Gerster (29), in America, have taught us the value of complete aseptic

necrotomy and union by organized blood-clot, which shortens the period of suffering and diminishes the danger of amyloid degeneration from prolonged suppuration attending the older methods of treatment. This operation I have done four times in the cases reported.

If the disease has advanced to epiphyseal separation and suppurating arthritis complicates the case, then excision of the joint will have to be considered. Swoboda (30) claims that these two complications are very frequent and occur very easily in infantile osteomyelitis. Since the progress of the disease is usually very rapid at this age, the question of early resection, before epiphyseal separation and necrosis have taken place, has been discussed. Leguen (31) argues that it should rarely ever be performed and then only in the most serious cases. Max Jordan (5) and Thelen (32), on the other hand, urge its early employment, the former reporting two cases with useful limbs following operations. It is, however, indicated as a late conservative method. I have had three cases with these complications; in two (cases 9 and 10) I performed resection of the hip late in the disease.

The last resort in osteomyelitis is amputation; and, as in all other conditions, it should not be performed if more conservative measures can be employed, or only to save the life of the patient. It should rarely be resorted to in the shoulder or hip-joints, since the functional results following resection at these articulations are usually very good. I have amputated once (case 4) late in the disease involving the bones forming the elbow joints; once (case 11) in fulminant epiphyseal separation at the knee-joint; and once (case 13) late in complete destruction of the bones of the foot and leg.

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THE TREATMENT OF STRICTURE OF THE ANTERIOR URETHRA.

By W. L. CHAMPION, M.D., Atlanta.

The object of this short paper is to express my individual opinion as to the best means of treating stricture of the anterior or pendulous urethra. While the suggestions offered follow those of Otis and Lydston, they were gained from personal experience, and are presented to stimulate better work in urethral surgery. It might be well to state that with few exceptions urethral stricture is due to gonorrhea; "that a chronic gonorrhea or gleet usually means urethral stricture," and that the urethral discharge from 95 per cent. of the patients we treat—whether acute or chronic—will show the gonococcus present. I examined the discharge from the urethras of 368 consecutive cases in private practice with the results stated above, regardless of the length of time the disease had existed.

Considering the above facts,—that chronic gonorrhea usually means urethral stricture, that in 95 per cent. of the cases with a purulent or muco-purulent discharge the gonococcus is present, we can readily see the importance of carefully examining the urethra for stricture, and, if present, to use the best means of removing it.

In regard to examining the urethra for stricture it should be remembered the sound is not an instrument for diagnosis, and should not be used for that purpose. The bulbous bougie, or urethrometer, is the instrument to determine whether the urethra is strictured. A full size sound may readily pass into the bladder of a patient with a stricture of large caliber without its presence being known,

when the bulbous bougie or urethrometer will demonstrate a fibrous contraction. An abnormal narrowing of the urethra is a mechanical obstruction to the flow of urine, and causes the retention of a certain amount of urine in the urethra. This condition naturally produces a chronic state of inflammation which finally extends to the prostate gland, seminal vesicles and other adjacent structures.

As to the various methods of treating urethral stricture —by divulsion, electrolysis, dilatation and cutting—the only cases I have gotten satisfactory results from followed the latter operation. After using electrolysis in fifty-two cases of stricture I did not get the results claimed by others. Dilatation is the proper method of treatment in the strictures of recent formation—that is inflammatory thickening, and not fibrous contractions. To get permanent relief from organic stricture is to completely sever the fibrous bands or tissue with the knife, and by the use of sounds make the cut or strictured portion of the canal heal to the size of the normal urethra. The failures recorded after internal urethrotomy are due to the fact of the strictured tissues not being completely severed, or failure to introduce the sound at proper intervals after the operation. The fact that we frequently find more than one stricture should not be overlooked, and the operator should be careful not to leave a single fibrous band uncut, as the success of the operation may hinge on this point. As a rule strictures in the penile urethra are located within the first three inches, but it is frequently the case that contractions are deeper that require cutting. I do not consider it safe to do an internal urethrotomy without perineal drainage deeper than five inches. It is a fact that if a strictured urethra is properly cut, and the after-treatment carried out (which is as important as the cutting), the urethra can be examined years afterward and found free of contractions. The operation of internal urethrotomy should not be done in the surgeon's office.

The patient should be required to remain in bed three or four days. The sound can be passed on the third day, and the patient allowed to return to his business on the fourth. With a 2 per cent. solution of cocain the operation can be done with very little pain. Adrenalin used after the operation will control the hemorrhage. It is advisable to pass the sound every four or five days until the hemorrhage ceases, then every ten days for three or four months. In a brief paper of this character, the various kinds of urethral stricture—their location, causation and symptomatology—cannot be considered, nor the fact that nearly all strictured urethras are infected urethras; but the point I wish to emphasize is that internal urethrotomy is the proper method of curing fibrous stricture of the anterior urethra.

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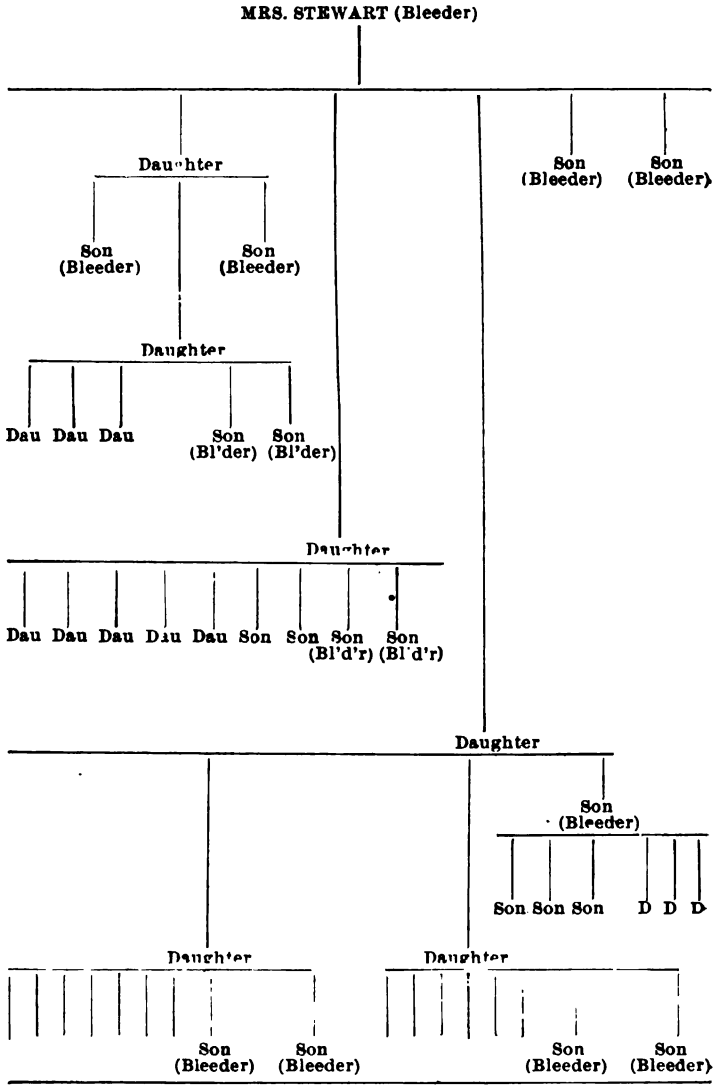
HEMOPHILIA—AN OBJECT-LESSON.

By CHAS. HICKS, M.D., Dublin.

There is nothing unusual in the history of the family of "bleeders" here recorded except the maternal head was herself a "bleeder." This family sprang from Mrs. James Stewart *née* Powell from the State of South Carolina, who removed to Georgia when a young woman and married James Stewart, a planter and stockman who lived in Laurens county.

Mrs. Stewart, from a family of male bleeders, herself a bleeder, lived to the ripe old age of seventy years. Her weakness manifested itself in severe hemorrhage from the extraction of her teeth. She was the mother of five children, two sons and three daughters. Both sons were bleeders and are dead; neither ever married. One, Charles, was thrown from a horse and died supposedly from internal hemorrhage; the other, John, a profuse bleeder from nose, was wounded in battle during the war between the States and died of hemorrhage on the field. The eldest daughter, Mrs. Duncan Graham, aged sixty-six years, was the mother of three children, one son and two daughters, all three dead. The son, J. L. Graham, an extreme bleeder, died suddenly at the age of thirty-seven years from lesion of the central circulatory system, just after an attack of nephritic colic. He was the father of six children, an equal number each of boys and girls, no bleeders. Mrs. Thomas Hart, the elder daughter of Mrs. Graham, was the mother of nine children, seven sons and two daughters, and died with consumption at the age of forty-eight years. She had goiter,



This family of "bleeders," as given to the writer by Mrs. Graham, Mrs. Stewart's eldest daughter, reaches back over three generations, near 200 years since Mrs. Stewart's birth.

which disappeared after symptoms of consumption became prominent. Only two of Mrs. Hart's children are bleeders, the two eldest sons, Raulston and Charles, aged respectively, twenty-four and twenty-two years. Raulston is married and has two children, son and daughter, neither a bleeder. Mrs. T. Y. Keen, the younger daughter of Mrs. Graham, died at the age of thirty-five, of consumption. She was the mother of six children, four sons and two daughters; two sons profuse bleeders of the nose and gums. Mrs. Stewart's second daughter, Mrs. C. W. Holmes, aged sixty years, is the mother of nine children, seven sons and two daughters; two sons bleeders, aged twenty-five and fourteen years. Her eldest son is married and has four children, no bleeders. Mrs. Stewart's youngest daughter, Mrs. John Holmes, aged fifty-seven years, is the mother of three children, two sons and one daughter. One son, a bleeder, died at the age of six years from hemorrhage after the extraction of a tooth. The daughter, Mrs. J. Warren Carter, is the mother of five children, two sons and three daughters; the sons both bleeders, the eldest of which died at the age of four years with some internal hurt or injury.

No female in this family, except Mrs. Stewart, the maternal head of the family in this State, has been a bleeder. None of the children of the males have been bleeders, whether the father be a bleeder or not, but the bleeders have been strictly confined to the male descendants of the females, bearing out the already recorded observations of the transmission of this condition to the male descendants of females in bleeder families.

Without a single exception the bleeders in this family are and have been sufferers with articular rheumatism, while none of the others ever have been. The

women of this family, remarkably like the women of other bleeder families, are good breeders, as is shown by the average of six children to the mother. The females of this family have shown no unusual disturbance at menstruation, or during accouchement; nor is there any other striking feature in this family with either sex. These people all live on farms near the village of Bruton, Laurens county.

The writer's experience in practice upon hemorrhage in this family has been confined to two of the extreme bleeders, J. L. Graham, a grandson, and one of the little Carter boys, a great grandson. From the slightest wound in J. L. Graham profuse bleeding would set in and it would continue about two weeks, irrespective of the treatment and appliances used. At the expiration of two weeks the hemorrhage would voluntarily cease; or better stated, the patient would become exsanguinated to that extent he could not further bleed. This individual while a boy pricked his gum with a sliver of glass that happened to be conveyed to his mouth in butter while eating, from which he was exsanguinated to the degree that he could not bleed. On one occasion a trifling wound upon his body from the prick of a pine straw or needle produced the same results. On another occasion his physician lanced a boil on the inner surface of the thigh, at that stage when the cuticle was quite ready to spontaneously rupture from over the pus, from which trivial operation came results similar to that in the former slight traumatisms. The last experience with this unfortunate individual was mine. He had been thrown from a wagon by a pair of disorderly mules, the fall resulting in a bruise of the right thigh and leg without a break in the skin. He began to have hemorrhage into the tissues of this extremity until

it reached very nearly double the size of its fellow, the left. At the end of two weeks the man was almost pulseless, extremely pale, eyes glistening, pupils dilated, looking as though almost in articular mortis. His limb had a brownish, jaundiced, ecchymosed look. His physician, Dr. P. M. Johnson, called in two of his neighboring physicians and sent for the writer. There was but one course to pursue, that of emptying the leg, which from past experience with this individual was hazardous. Instead of aspirating, I used a small bistoury, selecting as the most favorable location, to avoid, if possible, renewed hemorrhage from a new wound, a point over the quadriceps extensor tendon two inches above the patella. The opening was made, piercing through the tendon. From the opening began to flow brown blood. Commencing with two Esmarch bandages, one at the hip and the other at the toes, gently, slowly but firmly applying them until they met at the open incision just above the knee; extracting or expressing from the limb one gallon and five pints of blood. When the bandages were removed to our surprise and delight not a drop of blood oozed from the lips of the wound made by the knife. This latter good luck is accounted for probably from the fact that the same condition which had stopped further bleeding into the thigh and leg was in our favor. Except ankylosis of this knee, which may have been the result of the operation or from rheumatism, to which all the bleeders in this family are subject, the patient went along under the treatment of his physician to uneventful recovery; and lived ten years without a traumatism, or any particular manifestation of his hereditary fault until his death, an account of which has been given in the history of this family. I took a quart of this blood to my office, some of which I whipped to see if I could find fibrin, without

finding it, however. I exposed a portion of it to the air for hours, and chilled a portion by putting ice about it, but it did not clot in the slightest degree. The greater portion of the specimen was kept in a well-stoppered bottle expecting to get an opportunity to devote time with the microscope, but on the eighth day, having overlooked embalming the specimen, the process of decay blew the stopper out of the bottle and my rotting specimen had to be removed, showing, however, no evidence of coagulation. So, too, when the man died I did not learn of this until after the burial, or I should have plead for an autopsy to examine the exact lesions, and to learn if there be not in these bleeders abnormality to which this condition may be traced. Disinterment was suggested but not encouraged; clandestine autopsy was thought of, but too hazardous.

Mrs. Carter's little son, four years old, two years ago stumbled and fell, striking his upper lip against the metal corner of a trunk; one of his teeth and the edge of the metal clip met, parting the lip a quarter of an inch. The local physician, Dr. John G. Carter, having had much unpleasant experience with the bleeders in this family, called two of his neighboring physicians to aid him with this little nephew. A deep suture was suggested and applied, which staunched the blood for thirty-six hours, but when the process of repair reached the point when relaxation in the tissues about the silk suture set in, the blood welled up through the needle wounds, and instead of one bleeding wound there were three. At the end of a week Dr. Carter, having exhaused every available remedy that promised relief and himself physically exhausted, called the writer to his assistance. The little patient had gotton pale and his strength was failing. Being unable to contrive any mechanical device which the child would allow to remain on the lip, the

father and mother, by turns, sat by the beside and held the child's lip between the thumb and forefinger for as long periods as the little patient would endure the pain and fatigue. On the fourteenth day after the traumatism, when it looked as though the patient would succumb to the loss of blood, I concluded to try some one of the animal extracts, and knowing from experience that the patient's temperature would be elevated from its systemic effect, and shock probably added to the already precarious condition, I stepped to my phone and called up Westmoreland at Atlanta and asked if the game was worth the cartridge, and if I would be justified in giving and pushing the administration of thyroid extract or protonuclein. He replied that probably better results would follow the local application and internal administration of suprarenal extract. Having no fresh preparation Westmoreland sent me a package on first mail. When it reached me next morning the patient's hemorrhage had voluntarily ceased the night before, on the fourteenth day after the traumatism, depriving me of the privilege of observing effects and results of the adrenal extract in this condition.

Fuller reported in the *Medical News*, New York, February 28, this year, a case of hemophilia in a boy treated unsuccessfully with other remedies and relieved by 2½ grain doses of thyroid extract three times a day. Fuller reports also at same time a case in a man about fifty-five years of age who had hematuria almost constantly from the prostatic sinus, which was also similarly relieved with good results, using 5 grain doses three times daily. Delace (*Jour. de Med. de Paris*, January 23, '98) reports the case of a woman, who, because of hemophilia, suffered from very excessive anemia. She was treated by the various hemostatics and by repeated injections of ergotin without much result.

Finally three capsules of thyroid gland were given each day with the result that the loss of blood was immediately arrested. The patient gained in weight, the purpuric spots disappeared, the gums became firm, and some color began to appear in the face. Cardiac palpitation was decreased. At no time was the dose greater than three capsules a day.

The use of thyroid gland has since the year 1895 added to the therapeutics in goiter and myxedema and has revolutionized the treatment of cretinism, an offspring of abnormality of the thyroid. I have under care a woman, Mrs. B——, with diseased thyroid, which has in a great measure been relieved by the hypodermatic injection of iodine into the tissues of the gland. And though excessively fat, myxedema is held in abeyance with thyroid extract, but I have found no remedy yet to control insanity, which in this individual is present during pregnancies. The animal extracts have come and taken their place along with iodine and mercury in the pharmacopeia as glandular stimulants to aid not only in the control of acute complaints but to aid in the modification of cachexia, acquired and hereditary disease. What length of period is required, or what is the cycle of sporulation from conception to the development of cancer, consumption and syphilis and the other hereditary ills, we do not know, but we do know that environment, condition and circumstance precipitate their fulminating advent.

Autopsies since '95 have shown in cretinism excess of fibroid growth throughout the pituitary body, thymus gland, suprarenal capsules as well as other tissues, extreme thickening of the capsule of the kidney with fibroid degeneration of the glomeruli. Satisfactory histological pathology in goiter is meager except growth through colloid matter.

Observations which have led me to believe that lesions of the suprarenal glands, having excluded lesions of the thyroid and testes by physical examination and noting undisturbed functions, are factors in the existence of a condition productive of hemophilia are based on noting the coexistence of rheumatism in hemophiliacs and myxedema in those with abnormality or absence of the thyroid. As the one is so much more often seen in males and the other in females, these two conditions have not only been regarded by the statisticians as controlled greatly by sex, but they are recorded as the most hereditary of all diseases.

When physiology shall have taught us what bond of "sympathy" or control exists between the thyroid gland and the ovum secreting glands; what authoritative relationship exist between the spermatozoid secreting glands and the adrenals; what the use of the thymus gland in early life and its disappearance at puberty, why between forty and fifty years of age the ovaries cease to produce ova, why the suprarenal glands are relatively larger than the kidney in fetal life and twenty-three times smaller after puberty, the pathologist will doubtless be able to explain why females with abnormal thyroids are particularly subject to myxedema and males, we will say with abnormal adrenals, hemophilia. From what we know of cell life and tissue respiration, together with our present knowledge of functional activity of the histological entities in the glandular secretions, which, through vitalizing energy, are productive if not creative of force, we should learn that there comes the controlling power in the fluids and that glandular secretions hold in just equation the dynamics in the fluids of the body. From abnormality in this equation comes hereditary disease—chemic forces in the blood which ultimately result in abnormality of tissue or cause directly or indirectly some organ to run lawless its course. The organs pri-

marily at fault from lesion or in function are also the forerunners of faulty metabolism.

The brain's voluntary control of tissue and receiving impression through the medium of nerves is no more a truth than the fact that by the influence and effect of their secretions the glands exercise control over the fluids of the body. No nerve touches the cells of blood or any other fluid while in the vessels or sacks of the body. But in health the secretions of the glands do hold in just equation the albuminoids, oxygen, nitrogen, and all other essentials for wholesome blood supply, cell and tissue construction. As the brain in its limited sphere controls tissue and receives impression from tissue, so do the glands control fluids and are too impressed through the elements of fluids. Midway between, embracing and in some respects resembling both the nervous or the cerebrospinal and the glandular systems, in unending toil for either or for both, abides the sympathetic system, with its network of peculiar nerves holding within its grasp and control its apparatuses and organs. In order these systems come, the glandular, sympathetic, nervous or cerebrospinal, harmoniously in a socialistic manner, dependent upon and mutually aiding one another. Many of the sympathetic organs may be crippled functionally, by lesion or sacrifice altogether, and yet life be sustained: so in the glandular; so also in the nervous system. When the "tripod" of life, that is, the brain, heart and lungs, no longer functionate we have somatic death; but not until glandular secretion loses its power over the fluids do we have real cellular permanent death. The expression "tripod of life" should be changed from embracing two organs under the control of the sympathetic system, and made to refer to the vital centers of the glandular, the sympathetic, and the nervous or cerebrospinal systems.

The glandular, with its secretions, their chemicals and their fluids, is the primitive, the lowest of the three orders of physiology in man, the first in order to live and the last in the order to die; the sympathetic, the intermediate, the second in the order of creation and the second ordinarily to die; the nervous system, the third, last and highest in the order of creation, the first to die and dissipate again into inorganic matter, from and to dust, save the image, which we are taught never dies. The glandular is practically duplicated in the physiology of vegetation, which has the capacity of procreation and development through cell growth and fiber respiration, absorbing through liquids the elements of earth and air. Lower animal life combines the glandular system of physiology, simulated by the vegetable and the sympathetic. Higher animal life embraces the three—glandular, sympathetic and the nervous—modeled after the elements of man but without reason and the image; the latter we are not presuming to scan.

There is now no superstition nor royal decree obstructive to science, as when Galileo was forced to renounce truth and Harvey embarrassed in giving to the world his discovery. Nor should there be awe at the question, why, other than by the grace of God, the secretion from the spermatozoid "producing" glands in one individual conveyed through ducts meeting with secretions through ducts from ova "producing" glands of another individual in the womb—a procreative chamber where like begets or produces like by cell growth and tissue breathing, requiring a term or sporulation cycle of nine months. "The wind bloweth where it listeth" and the classics tell us that "death rides on every breeze and lurks in every flower"; we know that life does also. The pollen in the tassel (a gland) of

the tall growing corn that has reached its fruition under the beneficent touch of the sun's rays, dislodged by the gentle zephyr, falls upon the silken bloom (gland) below, and moistened by the evening dews fructifies the tender shoot and the earth is replenished, and the seed and germ of corn reproduced. With this demonstration in primitive physiology in the vegetable kingdom, why not, in a more highly organized system of physiology, there exist in a more perfect degree the interchange of glandular "sympathy" or control. We hear little of but one function of the testes, that of secreting spermatozoa; but castrate a man and note the voice evaporate, the acumen of his intellect dull and fat accumulate. So the ovaries are regarded also only as egg "producers"; but spay a woman and note the effects upon her nervous system and individuality, and observe the result upon her vital resistance. I am now impulsively asking myself the question, if I have the temerity to hint that we operate too much, or the courage to ask if too much operating is from a lack of understanding of physiology, pathology and therapy on the part of both the practitioner and the operator, that so many organs have to be sacrificed or crippled by surgical interference. Has this day of commercialism brought the practitioner and the operator nearer the purse and driven the student of physiology away from the bedside, or is it that the pathologist and the bacteriologist are traveling faster than the physiologist? The answer to these questions will have to come through the advent of other Virchows and Harveys—no other chart and log-book but truth, no code of ethics will do, to chase licensed pirates from the high seas of human frailty. As Harvey was embarrassed by his king in presenting his discovery before fully demonstrated, so have the public press and faddist embarrassed Koch, Brown-

Séquard and others in the evolvement and demonstration of truth. While demonstrating his discoveries Sims was driven by the envious to the point of desperation in a city of his own country. Before Lorenz returns to where he can speak his mother-tongue the harpies who pursue merit will bury their talons in his reputation.

We may suspend volition and sensation for hours—produce partial somatic death by the administration of chloroform, enforced sleep, this too in safe bounds and without material after-effects. When this has been carried on or allowed to go to the extent of suspending the functions of the sympathetic system, we can resuscitate. Even when the functions of the glandular system are suspended and we have complete somatic death, life has been restored after the individual had been adjudged a corpse for more than four hours; as in Armour's celebrated case poisoned from Indian hemp. A bullet crashing through the brain, destroying tissue and organic glandular substance, annihilating or obliterating intellect, volition and sensation, yet leaving the subconscious brain element functionating through the sympathetic and glandular systems for an indefinite length of time, or until in turn by inactivity and suspension of the sympathetic and the glands, cellular death is ushered in; or by virtue of continued activity of both function and faculty are renewed step by step until the lost intellect is restored to its seat. Here, as in injury and disease of tissue and organs, operative surgical interference may at times best be resorted to.

I ask the forbearance of the members of the Association in presenting views hypothetical upon this condition, freak or fault—hemophilia. I believe we should thumb-wear the pages in the book of object-lessons presented in physiological disturbances, anatomical abnor-

malities and organic lesions. Thus we are prepared to address ourselves to the conditions and better able to solve the problems on the proximal side of health. For when systemic disturbances have gone on until lesions organic take place, and the chain is broken, tenth or thousandth link breaks the chain alike. And he whose lot it is to treat the organically crippled becomes a willing or unwilling Charon to gently row his patient to that other shore.

Why should we be surprised that iodine is the most potent therapeutic agent in the treatment of a crippled thyroid or the conditions consequent upon this abnormality, when we know iodine is one of the elements secreted by the thyroid gland? Why should we be surprised that extract from adrenals and the thyroid and the testes exert influence over conditions consequent upon functional disturbances or lesion of organs over which these glands exercise potent influence. The animal extracts are in the materia medica to stay. Whether the ductless glands be corporated in a special system, or all the glands, those with and those without ducts, are socialistic, I do not know, but I am sure that a better understanding of Sajous's system published in his clever correlations would prove of value.

There is nothing in the published nomenclature, definition, symptoms, etiology, pathology and prognosis of hemophilia deserving of special mention except that the nomenclature is bad. "Definition: Hemophilia is an inherited or acquired disorder of the vascular system characterized by an abnormal liability to severe and sometimes uncontrollable hemorrhage. Etiology: It is the most hereditary of all diseases. Pathology: The prevailing view is that hemophilia is mainly due to a morbid condition of the vascular walls, and affecting especially the middle or muscular layer."

It is probable that the structure of the blood-vessels may be at fault also, especially the middle or muscular layer. But the prime pathological condition is still further traceable in the fluids of the body. The blood of hemophiliacs not coagulating under proper conditions evinces the absence of the proper supply of fibrin. Histological research and demonstration have ascribed to the adrenal system the source of the secretions which control the distribution not only of fibrinogen, myosinogen, myelin and hemoglobin, but also of peptones, ascribing as well the origin of these bodies to the adrenals. It therefore appears a reasonable deduction that pathological research will demonstrate fault with the suprarenal glands as the cause of hemophilia.

PATHOLOGY AND TREATMENT OF SOME OF THE AFFECTIONS OF THE UPPER AIR TRACT.

By JAMES M. CRAWFORD, M. D., Atlanta.

It is safe to say that ninety per cent. of the affections in the upper air-passages, indiscriminately and indefinitely defined as "catarrh," are due to some form of obstruction, which may be bony or cartilaginous, or else hypertrophies of the softer parts in the nose or upper throat.

In this paper reference will be had to adenoids,—to the perverted vascular action in the nose and throat brought about by the existence of malformations, mainly of the septum, such as spurs, deflections, etc., and also to acute and chronic aural catarrh.

Adenoids.—Apropos of adenoids, too much honor can not be paid by our noble profession to the great Dane, Wilhelm Meyer, who in his able treatise written in 1869, gave to the medical world the method by which he determined positively the presence of a morbid growth in the vault of the pharynx, and here I wish to quote with approval the following tribute paid him by Dr. Jonathan Wright of New York:

"In seeking for the cause of an eustachian catarrh in a patient, he pushed his finger above the velum palati, and thus became aware of a morbid growth, the removal of which has alleviated as much suffering and prevented as much disablement as any surgical procedure that was ever devised by the wit of man. Not only by his thorough exposé of the whole subject did Wilhelm Meyer thus confer an inestimable boon on suffering humanity, but he furnished a subsequent generation of rhinologists with their

most lucrative source of income. No other event since the discovery of the laryngoscope has so contributed at once to the glory and the profit of the specialty of laryngology. May the modern rhinologist and his patient alike view with unstinted reverence the figure of Wilhelm Meyer as it stands in the Gefion Platz at Copenhagen."

Although this essay was written as you see in 1869 the profession here in the South seems to have paid but little attention to this branch of the subject until about 1889 and 1890—a period of twenty years—and then very timidly. It is interesting to compare the mode of treatment for such cases prior to 1889 and 1890 with that in vogue at the present day. At that time the methods employed were, I may truly say, empirical, being confined to certain set formulas for catarrh, etc., and though it is true attempts had been made for several years to examine the upper throat with the rhinoscope, very little had been accomplished and the post nares was still an unexplored part of anatomy. Within the last decade, however, great strides have been made, and the operation for the removal of adenoids is of almost daily occurrence.

STRUCTURE.—The structure of this hypertrophy of the adenoid tissue, known variously as the "third tonsil," "Luschka's tonsil," and "adenoids," is so familiar to rhinologists of the present day that it would be superfluous for me to dwell upon it, and the symptoms so characteristic, that with the great light that has been shed upon the subject, diagnosis presents but little that is new. Indeed, were it not for its far-reaching and direful results, the whole subject might be considered too trite to bring before you.

DIAGNOSIS.—Whenever physiognomy portrays a thin nose with nostrils collapsed and narrow, indicative of buccal inspiration; narrow jaws, the result usually of a high-arched palate; when complaint is made of difficult noctur-

nal breathing; of blood in the mouth or on the pillow in the morning; of a feeling of fullness in the upper throat behind the posterior nares, and when there is a chronic or frequent recurring attacks of acute coryza, the conclusion is obvious.

But however conclusive diagnosis by symptoms may be, I favor the direct method of a digital examination. The rhinoscope has in my experience proven to be so impracticable, the patient having, save in rare instances, to be educated to its use, I have almost abandoned it, proceeding at once to a digital examination, especially in the young where hypertrophied tonsils exist, and in many cases of eye troubles, since the lacrimal canals connect the mucous membrane of the lids with that of the nose and throat.

OPERATIVE PROCEDURE.—Having found the adenoids, which may occur in any part of the laryngeal vault, the septum narium excepted, but which are more commonly found on the posterior and superior walls, I proceed to operate, using the curette, followed by the finger-nail for the smoothing and removal of any remaining hypertrophied tissue.

Personally I do not favor the use of anesthetics, save that of cocain locally applied; but where, on account of extreme nervous irritability, a general anesthetic is desirable, I prefer chloroform, on account of the less disagreeable after-effects than those produced by ether, and because it can be more quickly administered. The operation is not a very painful one, being no worse than the removal of a pair of tonsils, and can be performed in about thirty seconds; therefore, I take issue with those who assert that it is cruel to remove adenoid growths, especially in children, without the use of a general anesthetic, and also claim that the physical shock is no greater than that produced by anesthesia.

When the patient is a child, I have my assistant to hold

it in his lap, seated in an operating-chair. The child's hands are grasped by the assistant's right hand, while with his left he holds the patient's head firmly. Standing in front, and using a head mirror, I can readily see the patient's throat, and find no difficulty in quickly and safely removing the obstruction, using in most cases the Gottstein curette. So far I can report no casualties from hemorrhage.

TREATMENT.—After the operation, I prefer to treat the nose and throat daily, using a spray of Dobell's solution followed by an oil spray. This treatment I keep up more or less regularly until the parts are healed.

PROGNOSIS.—When we consider that these obstructions in the nasopharyngeal vault not only exert a disturbing influence upon the adjacent cavities, but have been found to be a predisposing cause of some forms of kidney trouble, we can not lay too much stress upon the importance of their early removal. I do not wish to be understood as meaning that the existence of adenoids is the prime cause of acute or chronic Bright's, but that adenoids create a tendency to nephritis, and I am confident that where adenoids and nephritis occur simultaneously, that the removal of the former greatly increases the probability of a cure of the kidney trouble.

CITATION.—Just here I wish to mention the case of a ten-year-old girl who had been suffering with acute aural catarrh from an existing adenoid. When, after a few day's treatment of the nose and throat with sprays, inflation of the eustachian tubes, etc., she was relieved of the acute symptoms, I appointed a time for the removal of the adenoid. The night preceding the appointed time I was called over the telephone by her family physician, Dr. W. S. Elkin, and informed by him that the girl was suffering from acute Bright's; that he had found tube cast, hyaline cast and albumin, and that on that account he would deem

it unwise to perform the operation. Consequently the operation was deferred for ten days, at the end of which time she was very much better, both from the cold and from the attack of nephritis. Unfortunately, however, she contracted another cold, and all of the other symptoms returned—albumin, tube and hyaline casts. When in a couple of weeks she had recovered in a measure from this second attack, the attending physician agreed to the operation, which I successfully performed in my office without an anesthetic. The physician reports to me that the symptoms of nephritis have disappeared entirely. This complication and happy termination has been observed by the writer on more occasions than the one here reported.

ETIOLOGY OF ADENOIDS.—As to the etiology of adenoid vegetations I am led to believe that they are largely hereditary. Nature is not so superficial as to give to a child the outer form of a parent's nose and ignore the underlying structures.

MALFORMATIONS OF THE SEPTUM.—Prominent among the obstructions causing perverted vascular action in the nose and throat are the several malformations of the septum, such as spurs, bends, deflections, etc. In many cases where we find the existence of adenoids we also find spurs or deflections, and this condition or complication I also ascribe, in a vast majority of cases, to heredity, and in but few to injuries.

SURGERY OF THE SEPTUM.—In the operative procedure for the removal of these bony or cartilaginous obstructions, we have made as great studies as in that for the removal of hypertrophies of the adenoid tissue. As there are no glands on the septum, it being simply a partition dividing the nostrils and acting as a framework, the malformations can readily be removed with the saw when skillfully and judiciously handled. By the use of a little 4

per cent. solution of muriate-cocain applied with a pledget of cotton, the pain from such an operation is reduced to a minimum.

LEGITIMATE USE OF COCAIN.—In this connection I wish to emphasize the point that *the use of muriate-cocain in nose and throat work should be that of relieving pain in cases of operation, and should not be used in the treatment following such operations.* I regret to say that we have cocain fiends being daily produced by such unprofessional methods.

TREATMENT.—The operation being accomplished, I pack the nose lightly with sterile gauze, removing the dressing at least once a day. A spray of Dobell's solution followed by an albolin spray should be used at each dressing. Too much cannot be said of the efficacy of Dobell's solution in cleansing the nose, and I fear we do not use it enough, depending too much on the albolin spray.

HEMORRHAGE.—Occasionally we meet with cases of profuse hemorrhage from this operation, but they seldom prove fatal, being quickly controlled by adrenalin, and by packing the nose with sterile, non-absorbent cotton. The discovery of adrenalin has been of vast importance, both for its admirable astringent properties and its value as a cardiac stimulant. In regard to instruments I have used various patterns of saws, but prefer the Bosworth.

ACUTE AND CHRONIC AURAL CATARRH.—These obstructions to which we have had reference are an important etiological factor in some of the diseases affecting the ear, and their removal is, I may say, the sheet-anchor in the treatment of most cases of acute or chronic aural catarrh. It is my usual custom to first search for these possible obstructions, and when their existence is discovered to immediately remove them.

INFLATION.—I then endeavor to locate the ear trouble by the use of the tuning-fork, and if found to be in the

middle ear, inflation of the middle ear follows. In cases of internal nerve troubles inflation is of but little value. I seldom employ the eustachian catheter, but use instead compressed air from an air-receiver or tank at a pressure of about thirty-five pounds. I have found no trouble to arise from this method and prefer it to the catheter, inasmuch as it is more powerful and is more quickly manipulated.

As the eustachian tube is not only an air conductor to the middle ear, but is also a drainage-tube, you can readily see why I lay so much stress upon inflation or the opening of the natural outlet, the eustachian tube, especially when it is realized that when this method is employed perforation of the drum membrane is impossible.

If the satisfactory results of inflation in cases of acute aural catarrh were better known, there would be fewer advocates of the old-time prescription of laudanum and sweet oil, a perfectly useless procedure, since it does not reach the affected point. Every general practitioner should equip himself with a Politzer air-bag for use in cases of earache, as by it the tube which is closed by engorgement can be readily opened and relief quickly procured.

BENIFIT TO POSTERITY.—To those of us who have seen a generation grow up since we entered upon our practice, and have seen the development that a score of years has made in our profession, especially in Georgia, the pleasing thought arises that the coming generation will be the greatest beneficiaries of this skill and research.

Not only will they inherit a more vigorous physique from those who have had the benefit of this skill, but along with that physique will come a more active mentality; and in the treatment of such disorders as may attack them they will have the benefit of a highly trained and studious profession. Adding to this increased professional knowledge

the better education of our fellow citizens, let us hope that the quack and his nostrums will vanish from the earth.

DISCUSSION ON DR. CRAWFORD'S PAPER.

Dr. Cox: I was very much interested in this paper, especially with reference to the relation between acute nephritis and adenoids. I have never suspected that any such relation has ever been noticed, and I have never read any report of such cases. I have under my care a little girl eight years of age who had acute nephritis and the largest adenoids that I ever saw. I have removed her faucial tonsils, and am awaiting her recovery from this to remove adenoids. She was a mouth-breather.

The doctor said that in inflating the ear he used forty or fifty pounds pressure. Fifteen pounds to the square inch will rupture the drum. Most of those that we deal with are not normal drums, but weakened from various conditions, and therefore we would expect him to have many ruptured drums.

As to local anesthetics, I received my training where they did not use the general anesthetic, and I have seen reports of a rather large number of cases that did not recover after the use of chloroform, and therefore I get some one to hold the child, and I think the complete operation can be accomplished in this way.

Dr. Thomas: I never give an anesthetic to take out adenoids. I simply hold the child and do not even use cocain. It is not a bad operation, and I do not have any trouble.

Dr. Roy: There are one or two points which the gentlemen have mentioned which should not go unchallenged, especially as the last three of them have spoken about the removal of adenoids without the use of an anesthetic. Personally, when I want to do a complete operation I al-

ways use chloroform. They do not use a general anesthetic in Germany because there they are simply rough in the extreme and do not care about the feelings of the patients they treat. You can go to these German clinics at any time and see the children sitting around wrapped in sheets, crying and streaming with blood, and for this reason it is barbaric to do this operation without giving them chloroform. I claim that you have to give an anesthetic to do the operation thoroughly. If you do not give the anesthetic the child is struggling and spluttering blood, and it is difficult to tell what you are doing; while if you put the child under chloroform you can go into the mouth with your finger and thoroughly examine the parts and remove the adenoids. We have had this matter discussed in the various associations and it has come to be the opinion of the laryngologists all over the country that you must give an anesthetic where you want to do a thorough operation.

I disagree with the doctor about the use of the mirror in diagnosing adenoids. You can take the post-nasal mirror and diagnose a large majority of the cases. In some cases you cannot do it, but in the majority of cases it is certainly unnecessary to use the finger to diagnose these adenoids. Also, when the muscles contract in the soft palate you cannot tell whether you are pressing upon the prominence of the eustachian orifice, muscles, adenoids or something else.

I agree thoroughly with the doctor about the cocain sprays. I always limit the cocain to the spot upon which I expect to operate. We should not prescribe cocain sprays, and we should not use the cocain in the sprays in our office, as it is a means of starting the cocain habit, and you can trace the cases of many habitues all over the country to the constant use of cocain spray in the physi-

cian's office, or from having it prescribed. Therefore, I would urge what I said in my paper of a few years ago on "The Use and Abuse of Nasal Sprays." If you want the cocain's astringent effect use the adrenalin solution.

As to spurs on the septum in chronic nasal catarrh, we have long ago found out that in ninety-nine cases out of one hundred the nasal spurs have no effect in producing deafness. We find a great many people suffering with deafness who do not improve with removal of the spurs. We also find catarrh of the ear with normal nasal passages. It is absolutely wrong to say that hypertrophy and nasal spurs are the cause of aural catarrh or deafness. We will not know the cause until more light is thrown upon the subject.

As to the pressure of thirty or forty pounds inflation into the middle ear, I agree with Dr. Cox, and I called attention in the same paper on sprays, that we should not use any spray with a higher pressure than fifteen pounds.

Dr. Stirling: As to the use of anesthetics in the removal of adenoids, I gree with Dr. Roy that to operate without an anesthetic is a barbarous procedure. I believe there is some danger in the use of chloroform, and I consider that this danger can now be avoided by the use of chloride of ethyl and nitrous oxide gas.

As to the method of diagnosis. I agree with him that this can be done in the majority of cases by the use of the mirror. I think a word of caution should be offered in connection with the question of a supposed relationship between Bright's disease and adenoids. As forty or fifty per cent. of children have adenoids, and as nephritis is not rare, we should consider their occurrence together more a coincidence than a direct relationship until the latter is proved.

It has been pointed out that fifty per cent. of the people have nasal spurs, and Parker, of London, has shown that the air in passing through the nose curves upward along the middle fossa above the level of most spurs, which, therefore, often do not retard its movement.

Dr. Graham: I differ with Dr. Roy in regard to the treatment of the patients at the German clinics. These children there are stoical and allow the operators to take out the adenoids without struggling and crying. The blood runs the same, whether you use chloroform or not. If the child does cry it will not hurt it. If I were going to be operated upon I would prefer not to have the chloroform.

Dr. Crawford (in closing): In answer to Dr. Cox and Dr. Roy in regard to a pressure of fifteen pounds being sufficient to rupture the drum, and that it could not stand thirty or forty pounds pressure, I will say that "the proof of the pudding is chewing the rag." I have tried it, and not only once a day, but nearly every patient who comes to my office with aural catarrh. I use it in preference to catheterizing the eustachian tube. I have tried it and know I am right. I have tried it for the last five years and have never yet had a drum membrane to rupture. I do not claim that thirty or forty pounds strikes the drum of the ear, but I do have this amount of pressure in the tank, as it is registered on the dial. All the pressure does not reach the ear, as some is lost. If you take the Politzer bag, with the eight pounds pressure which you exert, only about two pounds pressure reaches the drum. I do not use the catheter, as there is some danger in introducing it, and without it there is less shock to the patient, and I know from experience that it is best not to use it.

As to the anesthetic, you can make the operation in thirty seconds, and we are not barbarous in doing it, and it is not a bad operation. I say this to erase the idea that it is such a big operation that you must give an anesthetic, and thereby endanger the life of the patient through the effect of the anesthetic on the kidneys, if nothing else.

REMARKS ON THE PATHOLOGY AND TREATMENT OF DEAF-MUTISM.

By ROSS P. COX, M.D., Rome.

The opinion that defects confined to the ear-drum, or to the drum and middle ear, were the usual cause of even the highest degree of deafness has long prevailed, and to a large extent prevails at the present time.

To show how wide-spread, deeply rooted and recent this teaching is, I beg to quote from the address of Dr. J. C. Gordon, probably the best known teacher of deaf mutes in America, made before a convention of instructors of the deaf at Chautauqua, N. Y., July, 1894.

Speaking of deaf mute pupils, Prof. Gordon said: "In the great majority of the cases we have had to deal with, the trouble in hearing is chiefly with the curious conducting mechanism of the middle ear." . . . Prof. Gordon further quotes a number of aurists to show that, in cases of deafness from disease, "not more than three per cent. at most are connected with the inner ear." He later quotes authorities who propose to benefit the hearing of deaf mutes by removing anchylosed ossicles, the ear drum, etc.

Previous to my work among deaf mutes it never occurred to me to question these views. I knew the important role of middle ear disease in ordinary degrees of hard hearing, and was influenced by previous reading to believe that herein often lay the cause of the highest degrees of deafness.

Furthermore, in preparing for this work, I studied such text-books on otology as I had, and found the view that

conduction lesions were a common, if not the common, cause of mutism, freely accepted.

That, taking all degrees of deafness, the per cent. of perception lesions is no greater than three, or that excision of the tympanum and ossicles is beneficial in some cases of fixation or caries, with advancing deafness, it is no part of my purpose to deny; but that genuine established mutism, resulting from deafness, affords a promising field, or, indeed, any field for any kind of middle ear medication, massage or surgery, done to restore hearing, or that the essential lesion of the deafness in this class of cases is nearly always, as Dr. Gordon asserted, or frequently, or in any case whatsoever confined to the middle ear, are propositions that my study of deafness and its pathology has lead me to reject.

As I progressed with my examinations of the 180 pupils of the Georgia School for the Deaf, I was impressed by the, to me, surprisingly large number of good ear drums. Thirty-three per cent. had one or both tympana absolutely or nearly normal, and more than another thirty-three per cent. showed changes that were, I thought, of a minor importance.

I was all the more astonished because nearly ten per cent. of those with good drums and apparently good middle ears gave for cause of deafness such diseases as rising in head, scarlet fever and catarrh.

I am positive that the state of the average tympanum and middle ear of those who have consulted me for minor degrees of deafness or other ear troubles does not compare favorably with that of these pupils.

I also noted that a series of test forks gave with great uniformity results that indicate perception lesions, and, I think, not less so when the tympanic cavity showed the worst changes.

Now, if you stop the external canals of the normal ear with wax, oiled fingers or what-not, it can still hear the

raised voice several feet or yards away. Furthermore, aurists know that it is not a very uncommon thing for disease or surgery to destroy or remove every vestige of the tympanum and contents of the middle ear, and yet have good hearing remain. These facts prove that these parts are not essential to audition.

Seeking new light, I invoked the aid of the Volta Bureau at Washington, and having ascertained the titles of the latest and most scientific works on deaf-mutism, I procured the books. One was that of Holger Mygind of Copenhagen. It contains detailed post-mortem reports of 139 deaf mutes. A few later reports by Haberman, Schwaback and Love, I have been able to add.

I can find mention of no disease of the middle ear of deaf mutes that in degree and kind has not also been found among those who have only hardness of hearing. More than this, for a period of the last fifty years, among all the autopsies on deaf mutes, I cannot find one where it is at all evident that a careful and scientific examination of the entire hearing apparatus was made and more or less destructive changes or malformations of the labyrinth, or parts central to it, were not found. In less than twenty-five per cent. of the cases was it even claimed that the chief cause was in the middle ear, and, as these are admitted to have had osseous closure or anchylosis at the fenestra, I think the process cannot be regarded as being confined to the middle ear.

Anchylosis of the stapedial plate at the oval window is admitted by all to be the ossicular condition that produces the greatest disturbance of hearing. Mygind states that this lesion has been found in twelve per cent. of the autopsies on deaf mutes, but in every instance, save one reported twenty-one years ago, there were also found lesions of the sound-perceiving apparatus which were the most probable cause of the deafness.

Love, of Glasgow, who, like Mygind, is a very able and distinguished worker in deaf-mutism, thinks that the osseous closure of the fenestra in early childhood would prevent the development of speech, but he considers the possibility of such closure without involvement of the labyrinth as questionable. Love credits Ucherman with reporting a case whose middle ear alone was involved on one side, but in Mygind's notes of this case, it is clear that the labyrinth was also affected.

Mygind, who is undoubtedly our greatest authority on deaf-mute pathology, speaks of the rather frequent cases where there was complete absence of the ossicular auditus, but asserts that "coexistent with the absence of the ossicula, there were pronounced pathological changes in the labyrinth," and regards these as the principal causes of the deafness in all cases.

Love affirms that "without any detailed examination of the morbid processes that accompany deaf-mutism, we may safely predict that the deafness is almost always due to abnormality of the labyrinth."

Hence, it is clear that the essential lesion of true deaf-mutism is in the essential parts, the labyrinth and its inward continuation. That the changes are of a radically destructive or deficient and organic nature, the morbid anatomy prove; that they are incurable, experience sternly attests.

Such is the net result of nearly 150 of the most carefully made and trustworthy autopsies by Mygind, Haberman, Gelle, Moos, Voltolini, Toynbee, Meyer, Schwartze, Politzer and others.

They also show, contrary to opinions heretofore accepted, that congenital deafness, due to malformation, is rather rare. As a rule, the pathology of congenital deafness is in kind precisely that of acquired deafness, and consists of the results of destructive inflammation within the unyield-

ing, narrow, pent-up cavities of the labyrinth. This inflammation advances ordinarily from the middle ear, much less frequently from the brain, and very rarely indeed arises within the inner ear itself.

The inflammation is usually primarily acute, intense and purulent, but may be chronic and catarrhal. The result is more or less ruin of the sound-perceiving mechanism, a loss of specialized substance, under conditions that promise regeneration about as much as those of an amputated finger or excised eyeball, all of which things I have seen claimed in the papers.

It is easy to understand how even a little inflammation within the close, hard spaces of the petrous bone, where there is little provision for swelling or escape of morbid products, can do great mischief. It matters not whether the changes be prenatal or postnatal, or whether they be osseous, fibrous, calcareous, colloid, pigmentary, or whatnot, the result is destruction of essential nerve-tissue.

In the light of this knowledge, Dr. Love justly declares that most of men's efforts to cure deaf-mutism are ridiculous. "But," continues he, "modern treatment gives no brilliant results. We cannot cure deaf-mutism now, in the sense of a radical cure, any more than they could in the seventeenth century. And what is more," he concludes, "the clear light of modern pathological research tells us that in most cases we had better not try."

Mygind concludes his brief discussion of treatment with these words: "When a child is proved to have such deficient power of hearing that deaf-mutism is the result, the removal of that deaf-mutism by treatment can be hoped for in very exceptional instances. These exceptional cases are those who have some hearing and are not genuine deaf mutes."

Love gives interesting histories of deaf mute healers. The most successful of them all was the famous Dr. Turn-

bull, of London, who flourished not so long ago but that some of us might have known him. Turnbull fairly outclasses all the other curists. He completely deceived the very elect. He was the darling of the papers and magazines. He procured documentary evidence of cures from college professors, surgeons and even aurists, fooled everybody until he tackled the Scotch deaf mute teachers, at whose hands he met his Waterloo and was shown to be a complete fraud. His cure consisted in rubbing the alkaloid veratria on the drum and then with a syringe sucking at the external ear orifice to make the wax flow and sucking at the eustachian orifice to extract mucus. How did he deceive so many intelligent people?

It is very simple. If his motives were single and unselfish, it could well have been that he was himself the most deceived of all. His cures were like all other such cures. The patients had already some hearing and a little speech. The remnant of hearing had becomed dulled by disuse. Under the great stimulus of hope and faith, and the loud call of the healer this remnant, which was not dead but only slept, wakes up, comes forth and makes the most of itself. The patient *does* hear better, but the improvement is purely psychical and disappears with the extraordinary conditions that called it forth.

In the Georgia School for the Deaf only ten per cent. of the pupils are absolutely deaf, and about ten per cent. have just about the hearing and speech that such cures are made from.

In a previous paper I discussed the great practical importance of cultivating this fragment of hearing by systematic exercise into possibly useful hearing.

If the spark of hearing is too small, it flickers feebly and can never be brought to a steady or useful glow. If the remnant is considerable and there is extraordinary perseverance and strenuosity, language may be slowly and

painfully acquired, not from the creation of any new faculty, but from the physiological cultivation of that which already existed. This fact is even now shaking the educational system of the deaf mute world, and I think is destined for wide recognition and use in proper cases. It constitutes the best hope of not a few of the deaf.

This brings us to speak briefly of other treatment.

First and most important, What can be done to prevent such defects?

Stop consanguineous marriages, for they produce six per cent. of all the deaf mutes and sixteen per cent. of all born deaf. Discourage the marriage of the congenitally deaf, for ten per cent. of their offspring are born deaf.

Educate the laity and the profession to early subject children affected with conditions that cause or maintain ear disease to a rational treatment before the evil days come. When deaf-mutism threatens, or even is beginning, so far as the impairment is yet functional and not attended by loss of essential tissue, just as in lesser degrees of deafness, more or less relief may be had by removing the cause. Within the petrous bone I believe that clinical experience and morbid anatomy unite to teach that this interval of grace is brief and uncertain before functional passes into organic disablement, and treatment for hearing becomes foolishness or worse.

The class to which treatment offers anything includes, perhaps, ten per cent. of the best hearers in schools for the deaf, whose deafness may be recent and progressive, certainly partial, and there are active removable causes, such as adenoids, obstructed nostrils, inflamed and suppurating middle ears and the like. But let it be remembered that those who show conspicuous improvement are almost invariably those who already possess so much hearing that it

was an abuse of terms, probably, to call them deaf mutes at all.

At the Georgia School for the Deaf, I operated upon twenty-six pupils that seemed well suited to the purpose. The operations were for tight nostrils, adenoid vegetations and enlarged tonsils, with persistent or recurring ear inflammation. Of these eight finally showed improvement that seemed positive. This improvement is not sufficient to permit of education in schools for those who hear, but does fit them to become star pupils for the aural method.

A few cases, due to arrest of development, develop hearing about the age of puberty. Beyond this there is useful work for the specialist among the hopelessly deaf. Great quantities of hard wax and half a dozen foreign bodies were removed from the ears of the pupils at Cave Spring. They require treatment to free the breathing and resonating spaces, to heal inflamed or suppurating ears.

Since they must depend so much upon sight and as a class have unusually defective eyes, this matter should receive special attention.

Now, in conclusion, let it never be forgotten that the essential lesion of genuine deaf-mutism is in the essential organ of hearing, which is the inner ear and parts central to it, and that it is organic and incurable by treatment. These facts rest upon the firm rock of clinical experience and pathological data. They cannot be shaken either by the floods of ignorance or winds of charlatanry. The Great Physician, and he alone, can cure this sort. I do not refer to Dr. Hathaway.

DISCUSSION ON DR. COX'S PAPER.

Dr. Graham: I think that deaf-mutism is the wrong word to use. Anybody who is born deaf is bound to be a mute. Helen Keller cannot speak because she cannot hear. A person is deaf because the vibrations cannot reach

the cerebrum, and you can cure deafness if you know a way to put the vibrations in the right channel. A person can hear even if the vibrations do not pass through the ear. A person can hear by placing a disc between the teeth. There is not a person present who has been to church who has not been able to hear the basso profundo notes by the vibrations conveyed through the feet. I think that some day we will find a way to get these vibrations to the cerebrum where there is a lack of the organs of hearing.

Dr. Shorter: Dr. Cox's paper is undoubtedly correct in every way. The opinion of men who have had great experience is that deaf-mutism is a matter of inner ear trouble. In some instances it may be due to middle ear trouble, but outside of intracranial diseases, ninety-eight per cent. are inner ear affections; and where the function of the inner ear is destroyed operative procedures are of no value, and it is a waste of time to attempt to educate the faculty, but if there is some remnant of hearing to receive the impressions of sound or vibrations, then there is some chance of improvement. I have been very much interested in the last year or so in reading accounts of restoring sight to children who were supposed to be totally blind, but by flashing a bright light before the eyes day after day they would gradually acquire sufficient sight to see moving objects. This is a great thing for those who are absolutely blind. In those cases there was a remnant of sight, and this was gradually stimulated by the bright light. I think the same thing can be done with those who appear to be deaf-mutes, but who have a remnant of hearing, and the stimulation of this is where we get results, but in those cases where there is not even a remnant of hearing, treatment is not to be thought of.

ON THE TREATMENT OF INTERNAL STRABISMUS.

By DUNBAR ROY, M.D., Atlanta.

This subject has been suggested to me because its importance does not seem to be fully appreciated by the laity and even by the profession at large. There are two prominent reasons for this condition of affairs. The first is due to the fact that the itinerant quack, and even some of home production, promulgates the idea that the treatment of strabismus is a very simple thing and can be easily remedied without pain or bandage. The second is due to the laity itself, which seeks to have a defect remedied in the speediest manner possible, many times at the very first examination.

It is for the purpose of trying to impress upon the profession at large the importance of a thorough study into the treatment of this condition that the subject is brought before you to-day.

Allow me to refresh your memory with a few simple points in physiological optics.

In order for us to have distinct single vision the rays of light from an object must be focused upon corresponding retinal points. This always occurs in so-called normal eyes when the focusing point is on each macula lutea, the point where the focus must fall in order to have the most distinct vision. For us then to have single vision, the two eyes must always naturally turn in unison to the same degree.

For instance, the rays coming to the eyes from objects

situated at infinity are supposed to be parallel, while those from an object say one foot are convergent, and in this latter case both eyes turn in, but the same degree of turning is common to both, which brings the rays to corresponding retinal points. Now if these rays from an object do not fall upon corresponding retinal points, as when they fall on the macula in one eye and a certain distance from that in the other, then we will have double vision, and their distances apart will depend upon the distance of the separation of the corresponding retinal points. Remembering also the law of optics, that an object is always appreciated by the retina as being directly opposite to the point in the retina where the rays are focused; that is, rays from an object below strike the upper part of the retina, and the object is therefore recognized as being below.

When one eye fixes upon an object and the other eye turns in some other direction, we have the condition known as strabismus.

In the discussion of this subject I shall naturally leave out of consideration the strabismus due to paralysis. Strabismus is almost universally of two kinds, especially such as is most frequently called upon to be corrected by operative measures.

1. Internal strabismus, or where one eye fixes an object and the other one turns in. Note also that this is capable of a subdivision, which is a strong factor in determining the proper method of treatment. Namely, where you notice the squint in first one eye and then the other, or in other words the patient can fix with either eye. This is what is known as alternating squint in contradistinction to a fixed squint where it is always the same eye which is deviated. Then again we have what is called periodic squint, where the condition is sometimes present, then again is absent.

2. The other most frequent form is external strabismus, where one eye turns out.

These two classes of strabismus, the external and the internal, constitute practically the only classes which we are most often called upon to treat surgically, and of these internal strabismus constitutes almost nine tenths of these.

The etiology of internal strabismus is still an unsettled question. A number of scientific observers believe that it is due to some anatomical formation of the orbital cavity, on account of which the movements of the eyes are limited and even retarded. By others the causal factor is placed in some derangement of the nerve centers governing the ocular movements, while others consider the over development of certain ones of the extrinsic muscles to be the most important factor.

That the same etiology cannot be attributed to every case of strabismus is recognized by all careful observers, and for this very reason the same treatment, whether operative or non-operative, is not universally applicable.

I am fully convinced that the proper importance of the treatment of strabismus, or cross-eyes, is by no means appreciated by the laity, and I am even free to admit by the practitioners themselves. The popular opinion that a case of strabismus can be carried to the oculist's office at any time; that it takes but a moment to cut the muscles and straighten the eyes; that there is no pain whatever connected with the operation, is indeed fallacious.

The sooner the general practitioner and likewise the public are taught that cases of strabismus must be studied scientifically and thoroughly before any operative intervention is undertaken, the better will it be for the patients so afflicted.

It is very easy to straighten an eye by cutting the

tendons of the muscles which turn the eye too much in in that direction, and while the immediate effect looks brilliant, the remote results are frequently unsatisfactory.

You must remember that a patient afflicted with strabismus must in time depend upon these ocular members for securing an education and for the earning of their daily bread. For this reason, in correcting such a deformity, the physician must consider the utilitarian feature of his patient's eyes and not the cosmetic result. In other words, it is not *straight* eyes which are of most value to the patient, but *strong* eyes which will allow him to do his daily work; and when the two can be combined we have the ideal result.

My own ideas in regard to the treatment of internal strabismus are based upon personal observation and experience both in my own cases and in those of other oculists, and from a study of the literature which has been written upon this subject by men of wide clinical experience and judgment.

I would divide the treatment of internal strabismus into three parts or methods, believing as I do that this is the only scientific way of managing these cases:

1. By Glasses. Ever since the days of Donders, the father of scientific ocular refraction, it has been daily noted by oculists that there is a close relationship between strabismus and refractive errors of the eye. The fact has been noted with internal strabismus there is usually associated hypermetropia, or far sight, and with external strabismus myopia, or near sight. It has also been noted that with many cases of internal strabismus associated with hypermetropia, the correction of the latter would sometimes cause a disappearance of the former, and for this reason the manner of correcting internal strabismus by the use of glasses is a well-recognized principle of treatment. The explanation of this is

found in the fact that the internal recti and ciliary muscle respond to the same nerve stimulus, and if, therefore, eyes are afflicted with hypermetropia a stronger impulse must be given to the ciliary muscle in order to see distinctly than if the eye was normal, and this extra amount of impulse must also stimulate the internal recti to over activity, which it does not need but which is manifested by the turning in of one of the eyes. The younger the patient the more satisfactory and the more certain is the correction of internal strabismus by means of glasses. The reason for this is largely due to the fact that an eye that has had a constant squint for some time becomes amblyopic or partially blind, and if it should not be exercised by having its refractive error corrected and its function brought into use, what little vision that does remain will become deteriorated. Hence the necessity for correction of refractive errors associated with internal strabismus before there is any difference in the vision of either eye.

My practice in every case of internal strabismus is to correct first every particle of refractive error by the prolonged use of atropin and correcting lenses, and to give this a trial for months before undertaking any operative procedures. I am firmly convinced that the man who does not do this is treating his patient with grave injustice. It does not matter how young the child is, this procedure can be carried out in at least some modified form in every case. It may look cruel to put glasses on a very young child, but is this not better than to have a lasting deformity, with chances of good sight in only one eye and later in life to be operated upon with uncertain results? I have put glasses upon children as young as three years, and in every case I have been able to correct their internal strabismus. My experience is also in accord with that

of other competent observers, in that a full correction must be given if a sure result is desired. Mothers should be taught by their family physician to note early in life any deviations in the eyes of their children, and to early take the case to a conscientious oculist so that the defect may be remedied if possible while yet there is time. You may ask how are we to tell in children so young whether the existing internal strabismus is due to a refractive error? No case of refractive error can be properly estimated until the ciliary muscle is paralyzed by means of a mydriatic. If a mild solution of atropin is dropped into the young child's eye, and if when the pupils become widely dilated the deviation disappears, then it is almost self-evident that a refractive error exists. If the child is in any degree old enough, the amount of error should be corrected with glasses. Fortunately we do not have to depend upon the answers of the patient to tell whether or not we have the correct glass, for by means of retinoscopy or the shadow test, the exact refractive error can be estimated and the proper glass prescribed with every degree of certainty. In fact for the fitting of glasses for any one, all other tests are insignificant as compared with retinoscopy. During the last year I have corrected an internal strabismus in two cases of children three years old who are wearing glasses without the least bit of trouble. I am firmly convinced that no child should be operated upon for internal strabismus until a prolonged use of conservative methods has been tried.

2. Optical. By this I mean a systematic use of the eyes singly or combined, with instruments or without, which will exercise the power of vision and also the power of fusion. It is a recognized fact that the squinting eye of a patient who has suffered with internal strabismus for some time is almost always amblyopic or

defective in vision. This I believe to be due in the first place to inability to fuse the two images, and as a result of this the loss of exercise to the visual function. In an old case of strabismus the patient is not annoyed by double vision, whereas in one of short duration this is a symptom which is frequently present. The cause of this is the fact that in cases of long standing the patient soon learns to do all his work with one eye and ignores the image produced in the squinting eye. It is only after long practice that a patient can do this. Now if a case which can be corrected with glasses be not corrected early in the disease, then it is hard to overcome this defective vision in the squinting eye. Hence, even when the refraction has been corrected, both before and even after an operation, the amblyopic eye must be exercised by placing a pad over the best eye and thus make the patient use the defective member. Another method is to put atropin in the good eye and thus necessitate the use of the bad one. This is on the principle that any portion of our body will grow weak unless exercised. It is sometimes remarkable how vision will improve in a defective eye when such exercise is given. In conjunction with the above the fusion power of the two eyes must be brought into play, and this is best done by the use of the stereoscope. Even the ordinary instrument can be used with success. A better apparatus and one with which I am much pleased is Worth's amblyoscope. This is an instrument on the principle of the stereoscope, and with children it can be used with advantage, because it always entertains as well as exercises. It works on the principle of fusing two half objects into one. Careful and conscientious oculists have in the last few years depended much upon this optical treatment of internal strabismus, since it can be readily shown to be the ra-

tional and scientific treatment in a great many of these cases.

Dr. Gelpe, of Carlsruhe, in an extended article published last year upon the treatment of internal strabismus, sums up his views in the management of these cases in a manner which is probably in accord with the views of most of the ophthalmologists of the present day. His method of dealing with these cases varies according to the age of the individual. Up to six years of age the eyes of the patient are treated prophylactically, that is, the general condition of the patient is watched, and the use of the eyes more especially. From the sixth to the twelfth year optical treatment is instituted, that is, by means of glasses, stereoscopic exercises, atropia, etc. After this operative treatment is used if the previous treatment has failed, and even this is followed by careful testings, exercises, etc., in order to produce permanent binocular vision as far as possible.

If after such careful treatment as has been outlined improvement does not follow, then of course we must have recourse to operative procedures. Here also ophthalmologists differ as to the best operation. I believe it is not saying too much in stating the fact that the majority of oculists of to-day believe that the advancement operation, or advancement with cutting of the opposing muscle, is much to be preferred to the old operation of cutting freely both the interni muscles. Time does not permit me to go into details of the operative technique of advancement, nor would it be of any great benefit to my hearers, since such must vary according to the individual case and as to the preference of each operator. The quick cutting of both interni muscles and the immediate straightening of the eyes may indeed appear brilliant, as I have previously stated, but if the history of these cases could be fol-

lowed for years we would often find that the remote results are far from satisfactory. Such remote results as turning out of the eyes, sinking in of the caruncles, inability to use the eyes at close work because of the weakness of the interni muscles, are conditions which cannot be overlooked. In mild cases of concomitant periodic squint, where optical treatment has not afforded a good result, the partial cutting of both interni muscles will frequently prove entirely satisfactory. When, however, the squint is permanent in one eye and of high degree, the advancement of the externus and tenotomy of the internus of the same eye have in my experience proved to be the best operation. When the squint is concomitant and of high degree, the advancement of both external recti is an operation which is rapidly gaining in favor.

In conclusion, allow me to say that my main object in presenting this paper was to urge upon physicians the recognition of its importance and the importance of treating each case in a thoroughly scientific manner. That operations should never be done until all other measures have failed after prolonged trial. That what ever operative procedure is adopted, that such should be done with the same care and precaution as any other major surgical operation, and that the laity should be made to realize this importance if the best results are to be obtained.

DISCUSSION ON DR. ROY'S PAPER.

Dr. Shorter: I just want to say that I commend Dr. Roy's paper very much. I have been convinced for some years that we have been operating too abruptly. Now, when I get the parent's consent, I insist upon a long preliminary treatment as mentioned by Dr. Roy. We should have complete relaxation to get the refraction, and it is

astonishing the number of cases that can be cured without operation. I have been comparing the cases with those of fifteen years ago, and as Dr. Roy has so well expressed, it, it is undoubtedly true that then there were cases which should not have been operated upon. They should have been cured by proper correction of refraction. In some cases it may be necessary to tie up the good eye in order to get them in the habit of using the other eye. Also, it is astonishing how quickly you can get the confidence of these children and get them amenable to treatment.

Dr. Stirling, in discussing the paper, accentuated the wisdom of taking the patients in hand early, and of doing no operation until its necessity had been evidenced by the failure of the other means at our disposal.

Dr. Hiers: Dr. Roy's paper has covered the ground so completely that it has left little to be said. I rise to heartily approve what he has said, and especially with reference to treatment. My experience has been that we cure more cases and get better results from the proper adjustment of glasses than from operation, and I think that we are indebted to Dr. Roy for his paper.

Dr. Hobbs: Dr. Roy has covered the subject not only from a literary view, but also practically, and particularly has he laid emphasis upon the long treatment before operation. I have myself eight or ten children with glasses now. I first try them with glasses and correct them thoroughly, and reduce the trouble as much as possible, if not altogether. I should add one point about the charlatan idea of operation which was being done fifteen or twenty years ago. Then children were brought to the city and operated upon and sent back home the same day or the next, and the result has been that we have had to correct the results of these charlatan operations. For that reason I never operate until I have fitted the eyes

thoroughly with glasses, and then I tell the parents that it will take about six months to a year in cases of internal strabismus to determine whether it will be necessary to operate.

Dr. Calhoun: I did not hear Dr. Roy's paper, and he has just asked me about some points in the paper and mentioned about operating too early. I want to agree with him that dilating the pupil for a while helps to correct the difficulty, especially if the patient has periodic squint, and the correction of the error of refraction prevents this tendency to squint. I made it a rule years ago not to operate before five years of age, because many will outgrow it. As in my own case, when I was a small boy, I was quite cross-eyed, but when I was about five or six years of age I outgrew it. I outgrew it because my physical health was good, although my error of refraction was not corrected. I put on glasses myself, as I found I could see better, but the squint had disappeared before the correction of error of refraction.

My experience with these cases has been that outside of periodic squint, the wearing of glasses is not satisfactory. It is very well to test them always, but after wearing glasses for six or twelve months, if the deviation has not been corrected to a marked degree, then I advise operation. I am sorry that I did not hear Dr. Roy's paper.

Dr. Roy (in closing): Two years ago at the meeting of the American Medical Association this subject was brought up, and oculists there from all over the country were almost unanimously of the opinion that no case should be operated upon unless other measures had been tried for at least one year. My main object in bringing this paper before you was because of the well-known fact that patients will come in from the country and expect you to operate on them and let them go back the same day.

I will not operate on such cases unless I can watch over them and treat them for a year's time. As I stated in my paper, I want strong eyes and not straight eyes, and if we can combine the two, then we have ideal results. If you will put atropin in the good eye so that they cannot look at objects close to them, but be compelled to use the bad eye, this will frequently bring about exercise of the bad eye and exercise the center of sight. Then if you use the ambyloscope and exercise the fusing center, then you can produce a strong eye which will not need an operation. Even after the operation you have got to exercise the fusing center or there will be lagging or deviation of the muscle. Unless the eyes are treated properly and thoroughly and scientifically, a person will have weak eyes all their lives, whereas, if you had done your duty you should have stronger eyes for the individual.

SOME INDICATIONS FOR THE USE OF NORMAL SALINE SOLUTION.

By J. B. MORGAN, M.D., Augusta.

If it be true that the paramount duty of our profession is to save life, then the subject of this paper must be important, and I hope not uninteresting. My experience and observation in a wide range of emergency cases convinces me that we have at our command no more efficient and reliable agent for the saving of life than in the proper and prompt use of the normal saline solution.

I am perfectly aware of how extensively its benefits are known and its virtues invoked. While this is true, and serves as another illustration of the wonderful advances of modern medicine, it is not enough, for it is equally true that a great many good physicians do not use saline solution at all, and others employ it only in a few of the cases where it is so clearly indicated.

The frequent and extended use of normal salt solution since 1891 has satisfactorily demonstrated to all students of medicine its life-saving properties, and the fact that it is not now universally employed is not easily explainable.

I can understand why some general practitioners should fight shy of it on account of an indefinable fear that the technique is essentially surgical; that the use of it might be attended with some known or unknown danger; that it involves cutting, and therefore,

a review of anatomy, in order to find or avoid certain structures; but I should be loath to believe that any surgeon, from ignorance, indifference or laziness, would fail to give his patient the benefit of this agent in cases requiring its use.

Whatever the reasons may be which operate to deter some surgeons from the employment of this valuable life-saver, so well are its indications defined and its benefits understood, that a failure to resort to it will certainly bring regrets to the surgeon, with danger and perhaps death to his patient.

Neither time nor inclination will allow me to burden you with a review of cases in which I have found the use of saline solution of distinct and pronounced value in tiding patients over the effects of hemorrhage and shock, and of many other conditions, producing subnormal, intracardiac and intravascular pressure. The number would be in the hundreds, for normal salt solution is employed almost daily in our hospitals at Augusta. Each day, and each case, seems to increase its indications and widen its field of usefulness.

My experience with normal salt solution is confined almost exclusively to surgical cases, but our medical staff employ it quite as frequently as we do on the surgical side, and quite as successfully.

Whenever we encounter severe hemorrhage, from accident, operation, post-partum or other causes, we have learned to regard saline solution as a sheet-anchor to our patients.

The limits of this paper will not admit of a discussion of the pathology and etiology of shock, but, next to sepsis, shock is the cause of the greatest fatality following major operations.

In normal salt solution we have not only our most reliable agent in relieving but our most effective means

of preventing this condition by the free use of it before or during an operation where the advent of shock seems a probability.

Important as they are, the indications for normal salt solution are by no means limited to surgery.

In apparently desperate cases of lobar pneumonia, in which all of the signs point to a deficiency of water in the blood, normal saline solution injected beneath the skin has often turned the scale in favor of recovery.

In uremia, while diuresis does not seem to be materially increased, the effect of its use is good. The general condition of the patient improves, the heart's action becomes quieter, arterial pressure increased, the poison circulating in the blood is diluted and thereby rendered less noxious to the cells.

In infectious diseases, septic conditions and severe anemia, the results in cases reported are excellent, and clinical experience confirms these results. In addition to improved heart action and arterial pressure the red blood-corpuscles multiply more rapidly and the circulating poison is diluted, diminished and freely eliminated, especially through the kidneys. This "washing of the blood" should be continued as long as fresh toxins develop.

In cholera, dysentery, severe diarrhea, or any disease where there is a decidedly diminished quantity of water in the blood, a liberal use of normal salt solution is indicated, and without its use the resources of the physician will not have been exhausted.

Normal salt solution corresponds in its specific gravity with the normal serum of the blood, and is prepared by dissolving 93 grains of common table salt in 33½ ounces of distilled water—approximately a heaped teaspoonful of salt to the quart of water.

Various modifications of this formula have been sug-

gested, such as the addition of sugar, carbonate of soda and other ingredients, all intended to more nearly approximate the chemical formula of the blood; but clinical experience fails as yet to discover any improvement over the normal salt solution.

After the addition of the salt, the water should be sterilized by boiling. It seems to present no advantages to have the salt sterilized separately from the water, but the salt is first added, then the solution sterilized. Where quick work is not a factor, we can afford to prepare the solution in an ideal way, but under some circumstances salt directly from the table and any kind of water that is hot enough will do. The way in which the solution is to be used will largely determine its preparation.

Saline solution can be given by three methods: (a) injected directly into a blood-vessel—either artery or vein, (b) subcutaneously, and (c) by rectum.

All of these methods are good, and each has its advantages and advocates. Where prompt action is necessary, intravenous infusion is best. A vein in the operating wound, or any vein, can be selected, but the median basilic is the one usually chosen. It is rendered turgid and prominent by proximal compression, rapidly exposed, and incised transversely for the reception of the blunt-pointed cannula, or, what is quicker, a large, sharp hypodermic needle is thrust directly into the vein.

The solution should be allowed to fill the tube, and flow from the cannula or needle before it is pushed into the vein, to prevent the entrance of air. All aseptic precautions must be observed, and the solution not permitted to enter too fast, for fear of overwhelming a very weak and tired heart. The time should never be

less than ten or fifteen minutes to the quart. The easiest and safest manner of administering saline infusion is by rectum.

A fountain syringe and rectal tube, or a large, soft rubber catheter, comprise the entire apparatus necessary. Elevate the foot of the table or bed, inject it high and hot, and the effect is prompt and positive. Where the emergency is not too great, or the rectum too irritable, this method is very effective, and it has none of the disadvantages of either intravenous or hypodermic injections. A pint or more of the solution may be used, and if the collapse is grave or the hemorrhage has been great, it may be repeated two or three times in the course of a day.

I have seen as much as two quarts given at one time in this way, and every drop taken up by the thirsty blood-vessels. Saline infusion is often given by hypodermoclysis, but is somewhat slow in its effects, the lymphatics not being especially prompt in allowing the diffusion of the solution from the connective tissues.

Still, in cases where the indications are not too urgent, or the bowel becomes intolerant, the subcutaneous infusion, by reason of its simplicity, is often employed; in medical cases it is probably the most desirable. There is not the slightest danger of throwing in the solution too fast by this method.

After the needle and skin have been stérilized, the needle is plunged into the subcutaneous tissue of the buttock, loin, scapula, or submammary regions, and the fountain syringe hung several feet above the bed, or, if the Davidson syringe is employed, the bulb slowly and regularly but firmly pressed. As the fluid runs in slowly, absorption will be greatly facilitated by gently manipulating the infiltrated area, or by placing hot towels over it. When the amount desired has

been introduced, the needle is withdrawn and the small puncture in the skin closed with collodion.

If the condition of the patient is such that more than a pint must be given, the operation should be repeated in another region. Many instruments and apparatus, some rather complicated, have been devised for infusion in the veins and under the skin.

Some are good, none are necessary. Kelly's apparatus, with graduated bottle and force bulb in stopper, is probably the best.

Webster's little case is compact and convenient. A fountain or Davidson syringe, a small piece of rubber tubing or a soft rubber catheter, and a large hypodermic needle constitute the entire necessary outfit for the intravenous or subcutaneous methods. Common and simple as they are, with their aid a perfectly effective apparatus can be prepared and used in a few minutes.

Dr. Dawbarn, of New York, was the first to call attention to the importance and value of having the saline solution at a higher temperature than that recommended by the text-books.

I have carefully observed the effects of the infusion in a variety of cases, at temperatures ranging from 100° to 120° F., and in every instance the higher the temperature the more rapid and decided was the effect on the heart and blood-vessels. The solution should be from 115° to 120° F., and maintained at that temperature by the application of some form of external heat to the vessel containing the salt water to be injected.

If a thermometer is not convenient, use the solution as hot as the hand can tolerate. This will be about 120° F. If it is injected at a temperature much above this point it may cause destruction of tissue. Since, however, globulin and serum albumin do not coagulate

at less than about 160° F., it follows that we are well within safe limits at 120° F.

Whatever virtue normal salt solution may possess, it is undoubtedly enhanced by being used as hot as the protection of the tissues will permit. The marked effect of heat on the activity of all unstriped muscle is too well understood and appreciated to require argument here; it is necessary only to suggest that the muscular coat of blood-vessels is of the unstriped variety.

The quantity to be employed is dependent upon the condition of the patient, from one to three pints being the usual variations, and one quart or liter about the average amount. Where infusion is indicated at all, less than one pint, in case of adults, in my experience is useless. I do not claim that salt solution is curative, or that it exerts marked beneficial action on general nutrition, but as a means of bridging our patients over some dangerous condition where death seems impending, it has few, if any, equals. It can be employed by the general practitioner as readily as by the surgeon, and is as available at any home as at a well-equipped hospital.

DISCUSSION OF DR. MORGAN'S PAPER.

Dr. Williams: Mr. President, I heartily endorse what Dr. Morgan has said relative to hypodermoclysis; it is a most valuable addition to surgical science. While this is true, it is not without its dangers unless carefully employed. I have had two unfortunate experiences in the employment of saline transfusion or infusion, due solely to uncleanliness in its use. One case resulted in death from malignant edema within twelve hours after the infusion was given; the other developed a large abscess in the pectoral region where the solution was injected, colon

bacilli being found in the pus. In both cases the ordinary fountain syringe, without even preliminary sterilization, was employed in giving the treatment. The first was a case of pure carelessness on the part of an assistant who should have known better; the other was the result of haste in an emergency, and a pardonable failure on the part of the attending physician to appreciate, I am sure, the possibilities of the household syringe, as it is used to give the baby an enema and the mother her vaginal douche. The household syringe should never be used for this purpose; a special apparatus, even though it be a rubber fountain syringe, should be provided to be used for transfusion alone, and always to be sterilized before use.

Now as to the better method of administering the solution, venous transfusion or subcutaneous infusion. I am partial to the latter. It is just as expeditious as the intravenous method, without the possible danger of suddenly increasing the pressure on an excited or weakened heart. I have recently seen the statement somewhere, just where I cannot now recall, that if the solution is tinged with some inoffensive coloring matter and the infusion is administered subcutaneously, within five minutes the coloring matter can be detected in the urine drawn from the bladder. This being the case, then the solution is just as quickly absorbed by the system as it gets into the veins when the venous method is employed; it takes fully ten or fifteen minutes to perform the little operation of dissecting up the vein and making the connection between it and the needle.

As to the temperature of the solution. While of course the warmer the solution is the better the stimulation, still I do not think the question of absolute temperature is so important as the doctor claims in his paper. Time is lost in testing the temperature, and an appropriate ther-

mometer is not always at hand. In deliberate operations this is all right, but often transfusion is necessary in emergency work. In many of the cases in which I have employed the method I have felt I have gained just as much in time and safety by getting the system quickly started to absorbing by subcutaneous infusion as I would by the slower method of venous transfusion.

Dr. Graham: I was a student of Dr. Dawbarn in 1890 when there was a sudden call one night and I happened to be in the office. Dr. Dawbarn invited me to go with him. In the meantime, I will say that Dr. Dawbarn had been injecting dogs, etc., with a quart of saline solution to see how it would go, and it went all right. I went with Dr. Dawbarn, and when we got there we found the foot of the bed raised and the patient pulseless and cold. He had his sterilized syringe with him and we put in a quart of the solution, and the last I heard of the patient she is living yet. The injection was made into the femoral artery.

I happened to be in the clinic of Professor ———— of Heidleberg, when he was operating for empyema, and the patient almost went out of business, but was given a saline injection and is living yet.

Dr. Duncan: About three months ago I was called to see a lady who had had an abortion during the night. The placenta still remained and I found her pulseless and cold and blind, and trying to vomit. I gave her a hypodermic of atropin and called for some hot water and gave a quart of saline solution by the rectum. She was still bleeding and I tamponed her. In thirty minutes you could get a little bit of pulse. I got help and used a pint of normal salt solution in the mammary gland, and in thirty or forty minutes more the pulse was strong enough to remove the tampon and clean out the uterus, and that patient is living yet.

Dr. J. P. Davis: I had a case of tubal pregnancy and hemorrhage was still in progress and her temperature had dropped to 94.5, and I called for a consultation, and we decided it was advisable to use saline solution. She was operated upon and the abdomen cleared out, and I heard from the patient yesterday evening and she was doing well. Her temperature dropped from 104 to 94.5, and she was extremely pallid and her pulse went up to 140 to 160.

In another case of post-partum hemorrhage, I succeeded in arresting the hemorrhage, and used the injection of salt solution, and gave it with a hypodermic syringe as I had nothing else with me at the time, and after each injection with that small syringe you could see the effect upon the pulse of the patient. I would like to know whether it is advisable to administer the saline solution during hemorrhage.

Dr. Westmoreland: You should never use the saline solution where you have hemorrhage, as the pressure is increased and you wash the clot out of the vessels, and this will increase the hemorrhage. If the hemorrhage is stopped, nine times out of ten it will start again.

I want to disagree with Dr. Morgan on one point. It is not supportive but curative. The alkalinity of the blood is increased, and you can increase the temperature of the blood and this increases the immunity of the serum up to 104.

The only thing is the carelessness with which it is used. I believe I have killed at least one patient. It should be used with some degree of care, and it is not a thing which should be used in the family fountain syringe. It should not be used unless you have the same aseptic care that you would employ in an ordinary surgical operation. The idea that it can be used carelessly and on all occasions is one

that should be wiped out of the minds of all. It is used with great danger. I have had patients, at least two, where the saline solution did nothing but bring up the circulation, and they were overpowered by the saline solution which was put into them. I do not think the intravenous should be used at any time. You are operating and your assistant helping you, and if you open the vein you have to give up the operation or turn it over to some one to do it bunglingly, and then it takes at least twenty minutes longer this way than the other. The idea of injection into an artery should have no place in surgery, and the intravenous only belongs there under exceptional circumstances, and this previous to the operation. The only time is in an accident, and this is so small that it is practically wiped out, and in reality the way under all circumstances is the subcutaneous method, and not with the household syringe.

Dr. McHatton: In regard to transfusion, there is one thing that has not been brought out that I think is important. A year or so ago I induced labor in a woman with Bright's disease. It was decided best to give her transfusion. She had no convulsion and the saline transfusion was given subcutaneously. We gave her three transfusions at different times, and five minutes after each she had a convulsion, but none of the convulsions did any harm. I recognized that they were probably due to the infusion. Since then I have seen several similar cases reported, and I mention this as some present may have had a similar experience.

Another thing is sustaining the patient in typhoid fever where the power of the stomach is gone and they cannot retain fluids. I do not think there is any question that I have seen cases carried through by the use of the saline in the bowels.

Dr. Hardon: I wish to agree with what the doctor has

said in his paper. I have used saline infusions to quite a large extent, and with results as satisfactory as those which he has described. Not only have I used them in cases of loss of blood, but also after operations in which there was not much hemorrhage but in which there was profound cardiac depression; for instance, in long operations, especially abdominal operations, in such cases the infusion acts as a stimulant to the heart.

But there is another class of cases that are not surgical in which the infusions give excellent results, and that is in puerperal infections, septicemia and pyemia. At the Grady Hospital the results of saline infusion in such cases have been so satisfactory that we use it as a routine measure in all cases of puerperal septicemia. In puerperal pyemia I have used it also. This is a particularly fatal disease and the majority of patients die, but in my service at the Grady Hospital I have been able, by the use of saline infusions, to save at least two who came to the hospital almost in a dying condition. Of course, this forms only one element of the treatment, as it is always necessary to stop the absorption of septic matter from the uterus. I am convinced that the mortality of these diseases has been materially diminished by the use of saline infusions.

Dr. Morgan (in closing): I am exceedingly gratified that the subject-matter of my paper has provoked so much favorable discussion. Had I not thought the matter of vital importance I would not have taken up your valuable time in presenting it. I have known the saline infusion to be employed in a very great number of cases, and have never noted any effects but the very best from its use.

In regard to using it in the case of hemorrhage, I would of course arrest the hemorrhage before giving the infusion. I do not agree with the suggestion made by some one, of giving a saline infusion before an operation, and

for the reason that it would increase the blood pressure to the point where we might have hemorrhage of greater extent than without its use. In the future I shall never feel safe in undertaking a laparotomy unless the apparatus for infusion is near by, sterilized and ready. One of the objections urged by my friend, Dr. Westmoreland, against its intravenous use is that it will require too much time to administer the saline infusion in this way. In reply I will suggest that with an extensive experience, I am fully satisfied that the best and most prompt results can be obtained by this method. As to its requiring twenty minutes to open a vein, this is sheer nonsense; I have seen my assistant, on a number of occasions, have the solution flowing into the vein in five minutes or less.

Dr. Thrash: After you get hemorrhage stopped will not the use of the solution bring on the same condition that we have in hemophilia?

Dr. Morgan: I have never known it to occur in my experience, nor have I ever read of it. Of course all bleeding points must be controlled. From experiments made on the lower animals, and in one instance on a man, it has been found that sterile water, even though warm, will promptly kill the subject. If ever normal saline solution has produced death I have never heard of it. On the contrary, its marked beneficial effects in increasing cardiac pressure and stimulating the heart make it, as I have said in my paper, one of the most valuable agents in the hands of the physicians in tiding patients over dangerous collapses from almost any cause, and of preventing shock. In cases where the operation has been prolonged, and more shock and hemorrhage present than anticipated, the proper and necessary thing to do, is to open the vein at once and inject the saline solution. You will thereby save many valuable lives that would otherwise succumb to shock and hemorrhage.

REPORT OF CASE OF MULTIPLE FIBROID TUMORS, WITH PREGNANCY; OPERATION, CÆSAREAN SECTION.

By T. ELLIS DREWRY, M.D., Griffin.

I was called in consultation with Dr. N. B. Drewry to see the patient, Leola Hardwick, colored, February 16, 1903, and obtained from her the following history:

More than two years ago she had felt a small lump that was movable at the lower part of abdomen on the left side, which at first grew slowly but gave no pain and was of little inconvenience. She menstruated regularly until August, 1901. After cessation of menstruation the abdomen grew more rapidly, and she supposed that she was pregnant; though she says she did not remember to have felt any motion of a child at that time, but had grown so rapidly that she took it as a matter of course that pregnancy was her trouble. But after passing the time for delivery in the spring of 1902, she moved to Atlanta, and while there called in a physician, who told her that she had a tumor and advised operation. This she declined, and in September, 1902, she moved back to Spalding county, more firmly impressed that she was pregnant, as she claimed that she could distinctly feel the motion of a child, and thought it was delayed labor. In January, 1903, she had pains in back and abdomen, and, thinking that she was to be confined, had an old midwife with her for several days, who finally advised her to call in a doctor, or to go to one. At the time stated we found her suffering with occasional pains in ab-

domen and back, with nausea and occasional vomiting, appetite was poor, bowels constipated, frequent micturition, and every evidence of efforts of uterus to expel its contents. On examination over the abdomen, and as she was much emaciated it was not very difficult to trace the de-

pressions between the tumors, I could distinctly trace one in each iliac fossa, one on the right and one on left side, one between the umbilicus and pubis, a little to the left of the median line and overhanging the pubic arch, but receding somewhat behind the other two. Another, and apparently the largest, as it seemed perfectly smooth and firm and had no depressions or divisions, appeared above the umbilicus, pressing out the ensiform cartilage at almost right angles to the body, and evidently

impinging upon the diaphragm, dislocating the heart and liver and producing more or less frequent paroxysms of dyspnea, the whole surface of the abdomen presenting a nodular appearance, with the smaller nodules at the lower portion. All these nodules or tumors were of

a fine consistency and slightly movable, except the one occupying the space between the umbilicus and pubis; this one, having a soft spongy feel, and fixed, I concluded must be the uterus pressed in between the more prominent tumors of the right and left sides, since she said that that was the location of the pain, and in intervals of pain she felt a peculiar twisting motion. On examination with speculum nothing could be learned as the tumors filled the vaginal vault. On digital examination I found a large firm tumor

occupying the entire right side of the pelvic brim and encroaching very much on the left, leaving a small space to the left of the bladder between its own wall and the wall of a smaller tumor in the left brim of the pelvis. These two tumors lifted up the uterus beyond the reach of the examining finger, which could only be introduced between them by application of considerable force; therefore could learn nothing of uterus by digital examination. The bladder was compressed into a very small space between the tumors of the right and left sides and the middle tumor above and pubic arch below, and could only retain one and a half or two ounces of urine, causing the frequent micturition. From this examination I could make no satisfactory diagnosis. But from the symptoms and history, frequent micturition, backache, occasional bearing-down pains which grew more frequent, and her statement of feeling recently the motion that she felt was a child, nausea, etc., I took into consideration the possibility of a pregnancy. But as I could not touch from the vagina, and could not distinctly feel any external motion nor positively distinguish the fetal heart sound, was uncertain until after administering ether and examining the middle lower tumor, when I could distinctly see the motion through the thin abdominal wall and could feel the fetal head roll from under my hand. While under ether vaginal examination was no more satisfactory than previously. We kept her under close observation until February 21, 1903, hoping that there might be some change of position either of uterus or tumors that would allow of the delivery of the child and subsequent removal of the growths. But each day the pains became more frequent, with no alteration of conditions, and although warned of the probable fatal results to her she begged for an operation and relief.

On February 21, 1903, Dr. J. T. Nunnally administered

ether, and, assisted by Drs. N. B. Drewry, E. R. Anthony and T. J. Collier, I proceeded to open the abdomen, making an incision along the linea alba five inches in length, through which I explored the abdominal cavity, finding no adhesions to the walls, omentum or intestines, but a number of tumors springing from the body of womb, some with pedicles some inches in length, but so firmly and closely packed into the abdominal cavity that they could not be removed through the five-inch opening. The uterus was partially retired between the tumors of the two sides, and the fundus was pushed backward into the lumbar region by the large tumor which sprung from its upper anterior surface, with the os midway between the pubis and umbilicus, looking forward and upward more than five inches above the pubic arch and overhanging it. On account of the firm and solid consistency of the mass, upon hasty consultation I decided to first remove the child and thus give more room for manipulation of the tumor. After extending the abdominal incision to eight inches, an incision into the womb was made as high up toward the fundus as was possible, as the tumor from below held the os upward and forward, and the large one above kept the fundus pressed backward, the womb lying almost transversely to pelvic outlet. This incision was about four and a half inches long, through which the child, a well-developed male, was delivered living. The placenta and secuudines were removed easily and rapidly by introduction of fingers, but as we got no uterine contractions had considerable intra-uterine hemorrhage, but by compression soon got contractions and controlled hemorrhage. After controlling hemorrhage I examined for the cervical canal, but found the internal os completely occluded, and after examination the cervical canal obliterated. The uterine incision was closed with worm-gut sutures. The tumors and womb were then removed with some little difficulty, as

their pedicles were too short to allow one to pass out the opening without the other, all of them, eight in number, springing from the body of the womb, and it was almost like a solid mass. A double mass ligature was thrown around the adnexa, strong silk ligatures around cervical stump and removed with very little hemorrhage; had but just begun dressing the abdomenal wound when she collapsed almost suddenly and died in a few minutes. The mass, eight tumors and womb weighed forty-two pounds, the child six pounds, and with placenta, amniotic fluid, etc., must have weighed fifty pounds. The woman herself did not weigh exceeding ninety pounds. The child grew and thrived well until April 10, when he was seized with an acute attack of pneumonia and died on April 12, two days later. I think this is more properly a fibromyoma, as it sprung from the corpus uteri. The left ovary was enlarged to about the size of an orange and was adherent to the womb; the right ovary and tube were normal. It presents some peculiar conditions, as it would seem impossible to have an impregnation under the conditions as seen here—the cessation of menstruation, the rapid growth from that time and the evident fact that she was not then pregnant, the entire occlusion of the os found on examination, the difficulty of introduction into vagina. As to the operation, there was nothing else to be done. It was impossible for the child to have been delivered other than by Cæsarean section, and to have left this mass with an occluded cervical canal and closed up the abdominal wound would have been useless. Aside from the post-partum hemorrhage, which was severe, she might have recovered.

OUR HOUSE AND OUR SERVANT.

By H. McHATTON, M.D., Macon.

One of the most important questions before our profession to-day is preventive medicine. It may not give one as much glory to prevent a case of typhoid fever as it does to treat one, but in my estimation it gives him more personal satisfaction.

The vast importance of this subject can only be realized by us who know that at least fifty per cent. of all deaths are caused by diseases that are absolutely preventable. We also know that our State is far behind the times in this work, and that it is only by constant ventilation of the subject that we can ever hope to get the cooperation of our officials. In the meanwhile we should spare no effort to educate our patients up to the proper appreciation of the easily avoidable dangers that they run daily, and in this way save numberless valuable lives each year.

In the time allotted to me, it is impossible to go into this subject in its entirety, so I shall only take up some of the ordinary risks connected with our daily life.

Our house—referring only to the house that we move into as a purchaser, tenant or boarder—not to the house that we build. When a man contracts to buy a house, the first thing he does is to consult a lawyer as to the validity of the title. Does it ever occur to him to consult a doctor as to its medical history. No. He sees no reason to do so; and in the majority of instances, in my experience, where this information has been volunteered, it has not been appreciated or even pleasantly received.

I do not hesitate to say that there is not a gentleman present who has practiced his profession in one locality for ten years who does not know more houses with bad medical histories than with defective titles, or who could not point out a number of houses that he would not take as a gift, provided he had to move into them as they stand and live there one year. We know them; that they are infected, and that the danger of living in them is greater than that of a soldier going into battle. Still, as a rule, we allow our patients to move into them with at most a mild protest. Why? Principally because our advice is not asked, and voluntary advice along these lines is rarely followed. Most of these houses can be rendered perfectly safe at a moderate cost; some cannot at any price, because we are unable to find the source of infection.

We will leave out of discussion the well-known contagious diseases, such as scarlet fever and smallpox, for at present, in most of these cases, there is some slight effort at disinfection; but take tuberculosis, until recently the most deadly disease in our mortuary statistics. This is not the place to discuss its etiology. Suffice it to say that there is probably not a single authority in our scientific world who would deny that in the vast majority of cases it is acquired by taking into our system the tubercle bacillus. Personally, I am of the opinion that in ten years the physician that considers this disease as purely hereditary will be on the plane of the surgeon of to-day that does not believe in antisepsis or asepsis.

We do not know how many of these bacilli it would take to infect a properly prepared subject; neither do we know how long a given bacillus preserves its infecting power in proper environment. Certainly for many months, and probably for many years. We have them to spare, so we need not figure too close. When we remember

that the consumptive with a cavity expectorates from two billion five hundred million to four billion bacilli each twenty-four hours (Nuttall), we can form some idea of the condition of a house that has been occupied by one or more of these unfortunates for years with no practical effort at sanitation.

I have in my mind a house of moderate size which has had from one to three tuberculous inhabitants all the time for the past ten years. The house is now on the market.

A few years ago a tuberculous patient moved into a room in a boarding-house of the better class in an adjoining city and died. The room was taken by the next applicant who died in due time, followed by the second with the same fate, and by the third, who, when last heard from, was in the last stages of the disease.

Some time since I saw in consultation a child with tubercular miningitis, and incidentally its father with pulmonary tuberculosis. They both died and were followed in the house by a young married couple from the country. The woman was a magnificent physical specimen, with a perfect family history. Within a comparatively short time I saw her in consultation—tubercular meningitis.

An infected house was vacated for a few months by its owners. A family of three, all well and of good family and personal histories, moved in. One of these died in less than eighteen months and a transient visitor became infected.

In 1895 I took charge of an institution in my city; the occupants, adults, varying in number from twenty to twenty-five. In the previous ten years there had been ten deaths, one each year, all from tuberculosis. In the past seven years there has not been a death from this disease.

The following history is taken from that valuable work

of Latham on Tuberculosis: "A newly-built flat in a fairly sanitary condition, but badly lighted and ventilated, had been occupied for eight years by three families in succession; all of them had presented a clean list of health until the family X took up their residence in the same quarters. In this family the mother was consumptive when she came. She died in the flat. Shortly afterwards the family left, having lived there for one year only. The flat was next occupied by the family Y, of seven persons, all healthy. After a year's stay they left, and some years later the father, mother and one son died of phthisis, and a boy of chronic peritonitis. A third family, Z, all healthy to begin with, next took the rooms. One child died of meningitis, another of marasmus, and a third contracted hip disease; subsequently the father died of phthisis, another child of meningitis, the mother acquired consumption, and a child became scrofulous. A fourth healthy family, W, next came into residence. After a time the mother became phthisical, and two children died of meningitis. During the whole period over which these observations range, the flat was never empty and was never painted or cleaned. In other parts of the same building, which were properly cleaned, no case of tuberculosis occurred."

We may take up the same line of argument on typhoid fever. I will give only one example.

In the fall of 1895 a religious institution came under my professional charge, with the following history of typhoid fever: In 1890, five cases; 1891, six; 1892, three; 1893, ten; 1894, four; 1895, twelve. This institution has an average population of fifty. Their medical attendant's orders are implicitly followed regardless of cost.

Since 1895 there has been one case, and that unquestionably contracted in a camp during the last war.

We have another class of infected houses where our best efforts are of no avail in getting a satisfactory explanation of the cause. As an example I may cite the following:

A large, well-built house on one of the highest hills in my city became infected with malaria of the gravest type. Three families moved in in succession, and each of them moved out in less than a year on account of this infection. Not less than fifty per cent. of the inhabitants of this house were victims to the severer type of malaria during the time it was under my observation, a period of about three years. There were three other houses within a radius of fifty yards; in none of them was there a case of malaria during this time. It is needless to say that every supposed cause of malaria was investigated with negative results. This house was becoming a veritable nightmare to me, when, fortunately, it was destroyed by fire.

OUR SERVANT.

The servant question at present is in a transition stage, and becoming more serious each day.

Prior to 1861, on account of the constant personal supervision, medical attention, curbing of natural vices and gregarious tendencies, with general hygienic surroundings, our servant was as nearly perfect, physically, as any human being could be. What they were personally can best be shown by the absolute affection that we all have for our old mammies and uncles, and the number of them that are pensioners, after forty years, of the children that they nursed.

The servant of to-day is another being. They are deteriorating so rapidly that only the country negro keeps up the race. As a class, they have no supervision; are addicted to the worst of vices and live in misery in the vilest of hygienic surroundings. Even the better class do not

get the medical attention and good environment of the old days, and their gregarious tendencies subject them to exposure to all prevalent contagious diseases.

They leave us at night and report in the morning, sometimes. What do we know or care how the intervening time is passed? Our child's nurse often has spent the night in the same room with a case of measles, diphtheria, smallpox or tuberculosis, of which fact we may eventually become aware if the case dies. And our wife's dude butler! Suppose she even had the faintest idea of his progress of the previous night through the negro tenderloin of any of our cities. A vast majority of our epidemic diseases are brought into our families through our servants. To-day smallpox is epidemic in the State. In the cities at least ninety per cent. of it is among the negroes. How many of us know whether our servant is vaccinated or not; but there are other diseases. Think of the pitiable spectacle of the young mother leaving her home to save her first born from the possible contagion of the case of scarlet fever, around the corner, or the case of measles, across the street; and said first born making the trip in the arms of a nurse with tuberculosis, or with a mouth full of mucous patches.

In answer to an advertisement for a wet nurse not long since, I found three awaiting my arrival at the office—two tubercular. I had in an old ante-bellum aunty a pet patient whom I had been carrying for some time as best I could, with an advancing tuberculosis. She was a cook. Not reporting, I made inquiries about her and found that she was so sick that she had gone to nursing and was sleeping in the room with two children. We all know the negro's idea on ventilation, especially when he has a bad cold.

I had a rather fashionable monthly nurse some years

since who infected six in one family for me, and several families for my confreres, with the itch before the source was discovered.

There is probably not a gentleman in this audience that does even a small amount of negro practice in any of our cities who does not know of cases of syphilis in such a contagious stage, from an extra-genital sense, that they are liable to infect their employers.

I am now treating two cases of syphilis resulting from labial infection, in which there is no question in my mind but that the origin was from a servant.

I have seen quite a number of cases of gonorrheal infection in children from their nurses, in which absolute proof was obtained, and it is quite probable that many of our cases of fulminant ophthalmia might be traced to the same source.

A wife or child infected with tuberculosis, syphilis or gonorrhea is a terrible penalty to pay for our ignorance of the physical condition of our servants.

There is nothing to be gained by multiplying examples; the personal experience of every gentleman in this audience will furnish him with a sufficient number.

Our position is most peculiar. The servant comes to us professionally as a patient and he has his absolute rights. We have no more moral or legal right to violate his professional confidence than we have to violate that of the highest person in the land. We can advise him of his condition and the dangers to which he is exposing others, and he can follow his own sweet will. We are legally powerless.

This is no time to discuss the race question. That the young negro of to-day, regardless of his emancipation, education and religion, is but a sad degenerate, morally and physically, in comparison with his ancestor of '61 is

amply proven by that most interesting work of Hoffman, "Race Traits and Tendencies of the American Negro," as well as by the personal observation of the older members of this association.

That he is with us to stay is also proven by the efforts of colonization in Liberia and Kansas, as well as the most notable example of Durango. In fact, with all his increasing faults, he is as essential to us as we are to him, and will continue to be our servant for many generations.

In the present legal status of the question there are two things that we can do. One is to encourage our servant to resume, to a certain extent, his former relations with us; to live in our houses and on our premises, and let us assume as far as possible under existing circumstances our old supervision of his physical condition and material welfare. This, of course, would entail great care and a large expense on our side. The other is to make a physician's certificate an essential to his employment; said certificate to be renewed from time to time. If we are willing to assume the expense of these examinations, the vast majority of the applicants would not object. Thus far I have never had an objection from an applicant for the position of wet nurse, neither have I known any case of infection from an accepted one.

The applicant could be given to understand that the certificate would not divulge any of his physical ailments, but would simply state that he was or was not physically suitable for the prospective employment.

The danger to our children is much more serious than to us, because of the intimate personal contact between them and our servant. I am informed by high legal authority that owing to the peculiar legal status of our cities, occupying as they do, a position between that of the State and the family, and especially the almost absolute power

of the health authorities, an ordinance can be passed in any of them making it unlawful for any one afflicted with a known contagious disease to assume the care of a child. Also, that the powers of the board of health in the various cities are practically limitless in regard to infected houses.

I bring this subject before the Association, hoping for a full discussion; for instead of decreasing, these dangers are constantly on the increase, and from year to year, as we depart more and more from the simpler life of our ancestors, we are surrounded by new and ever-increasing dangers in our house and from our servant.

DISCUSSION ON DR. M'HATTON'S PAPER.

Dr. McRae: This is the most important paper that has been before this body for years, because it touches every home and every person in the State and in the United States, and especially in the South. The diseases which Dr. McHatton mentioned are receiving some attention, but not as much as they should have. This paper is one of the best arguments for the establishment of a Board of Health in the State. If the members present will present these facts to the representatives of their communities, that is all that is necessary. In the city we are protected by our city Boards of Health, but in the country there is no protection. Until we can get some regulation by which we can get the people all through the country vaccinated we will continue to have smallpox. It is the same in other diseases as in this. In the Grady Hospital last winter we had twenty-five cases of pneumonia at one time. Statistics show that tuberculosis is diminishing, while diseases like pneumonia are increasing, and a great many of them can be traced to direct communication. In one ward there developed four or five cases of streptococcus infection of the middle ear. At that time there was brought into the hospital a case that had erysipelas. I have no doubt that

the cases spread from this. I felt so sure of this that I had all the cases isolated and the other patients moved into another building, and had the ward disinfected from one end to the other. These are only a few points. The others mentioned by Dr. McHatton should be given our best attention. We can decrease the amount of suffering and danger to ourselves and friends by observing the necessary precautions.

Dr. Graham: Asiastic cholera has kept away from this country since 1881, and why? On account of the strict quarantine. This disease decimated certain portions of India, and yellow fever used to decimate certain portions of this country, but now we are knowing better, and know how to control the disease. It is only necessary to understand a few things more than we know now to get better results. How do we prevent infection in surgical operations? By sterilization. There is the whole principle. The microbes of infection are the cause, and we must kill them out. Careful sterilization and disinfection are the thing. The State should take hold of this matter and make it worthy of the doctors who have worked so hard to bring it about.

Dr. Hiers: I have listened to Dr. McHatton's paper with no little interest, and while he touched quite thoroughly upon the question of servants, I feel sure that he could have elaborated more if he had had time. There is one point that I want to emphasize. I am convinced that every servant in every walk of life infected with tuberculosis, syphilis, or gonorrhea should not be allowed by law to ply their vocation, and I sincerely hope that the day is not far distant when in the State of Georgia there will be a Board of Health equal to any in the United States to take charge of this matter and put it through.

Dr. Holland: I consider Dr. McHatton's paper one of the most important and interesting ever read before a

medical society. After the discussion of this paper, I would like for the doctor, in his concluding remarks, to tell us his mode of disinfecting in typhoid fever which is so prevalent in our section of the country. I most heartily agree with Dr. McHatton that we should take more stringent measures to prevent the spread of contagious diseases. Smallpox is practically stamped out in Germany by compulsory vaccination in the cities and country alike, and were we to take equally as stringent means to crush the contagious and infectious diseases of our country, they would be soon greatly reduced, if not entirely blotted out.

Dr. Burns: I want to say that I have enjoyed Dr. McHatton's paper very much, and it is one of the most important that has been read before this Association. I have known four people to contract tuberculosis in the same room within the last five years. We have a man in our town who goes to another part of the State to spend the winter, and a family came down to rent the house and the man had a marked case of the disease. In the spring of the year the man went back north, and the owner moved back to his place and his wife has since died of the disease.

Last summer I was made sad by the plight of several consumptives, as the people are getting so they will not rent to them. Our place is something of a resort, and one family had to move three different times. It is getting to be a serious question as to what to do with them when they come up there, and it is getting to be a serious question with me what to advise them to do.

Dr. Thrash: In regard to the cases of tuberculosis mentioned by Dr. McHatton, I wish to say that in my practice recently I have had quite a record. Within a space of eighteen months or two years three families, at different

times, occupied a small tenant house, and thirteen persons in those families died from tuberculois. With two or three exceptions these families were wiped off the face of the globe. It was one of the most noteworthy examples of the extreme contagiousness of this disease that has come before me. No effort was made to check this wanton destruction of human life, and it was only stopped by people refusing to occupy the house, and it was subsequently torn down by the owner.

The great bane in our country towns is typhoid fever. It is the most common of all malignant contagious diseases, and both physicians and people are too careless in its management. Not more than one half the people know the exceedingly contagious nature of typhoid fever, and we who have not looked into the matter have no idea of the number of doctors who sneer at its being a contagious disease. I know that possibly every member of this Association recognizes the value of prophylactic precautions, but not one fourth of the doctors in Georgia are members of this Association, and until we can get the physicians more interested and a health board who will map out a plan of management for these death-dealing contagious diseases, and force both the people and the physician to carry out their instructions, we will have hundreds of deaths yearly from infection disseminated from carelessness. There is no end to it. We have families move into a house with typhoid fever and no precautions whatever are taken as to disinfection, and there is no limit as to what one case will finally result in. I have one house in mind illustrating this point. This house has been infected for fifty years. I have heard of families being infected there from time to time since the place was settled, and there is no counting the lives that have been sacrificed. Only two years ago a family moved

into this house and boarding with them was one of the most prominent men in the county. He died with the disease, and three or four more were sick when these people moved out. Another moved in, and since they have had three cases of typhoid fever to develop from this infection. It is time that we were waking up to this matter and standing up and fighting like men for the preservation and protection of human life.

Dr. Earnest: The man who treats the sick, and who thinks that in doing this he has discharged his whole duty as a physician takes a very narrow view of the situation. There has been no doubt in my mind for a number of years that the greatest responsibility rests upon the doctors to educate the people in these matters. The doctor has done a good thing in calling our attention to this subject, and I feel that many of us fail to do our duty in this respect. I do not believe that anything can be accomplished without instructing the people as to what is harmful. We can cover some ground by legislation, but we cannot do it all. Some things mentioned in this paper cannot be reached by the legislature at all. Many of these things devolve upon the doctor, and it is his duty to see that the patients are instructed so as to protect themselves. I think therefore that great good may be done by the doctor calling attention to this, and it should be urged upon the profession to speak out in regard to such matters. How many of you who know that the house of your best patient is infected with tuberculosis will allow some one to move into this infected house without saying a word? We need the courage to stand up on every occasion and warn our patrons and give instructions whereby they may protect themselves.

Dr. L. G. Hardman: I think that the time has come when the teachers of medicine should teach not only the

administration of medicine and the use of the knife, but should also teach sanitation and hygiene. I think this is one of the causes why the laity know so little about this. If this was stressed more, and if our colleges would teach something along this line, it would result in great good. As stated by one of the members, only a few doctors in certain quarters instruct their patients in regard to these matters.

Dr. McHatton (in closing): Mr. President and Gentlemen: I am certainly gratified at the interest the paper has aroused. Of course, in a thing of that magnitude you can only touch at the outlines, as you could write on it all day. I agree with the doctor that it is not only our duty to administer medicine, but to instruct the people how to keep from getting sick. The greatest trouble about this, however, is that where we desire to do this the people are not educated up to the point to take our advice. Not long ago a man asked me about moving into a certain house, and I told him that if he did so his doctor's bills would amount to more than the price of the house. He moved in with the result that I predicted.

In regard to the disinfection in these cases, that is a special point to be considered in each case, and it is impossible to give any general rule.

In presenting a subject of this sort, it is simply to bring it before the Association, and let every man work out each individual case according to its merits.

AN OPERATION FOR PERMANENT AND QUICK CURE OF HEMORRHOIDS, ALMOST BLOODLESS AND PAINLESS.

By JOHN C. McAFEE, A.B., M.D., Macon.

I approach the subject of the surgical treatment of hemorrhoids fully aware that it has been discussed and rediscussed and talked about generally, from time immemorial, as much as, and probably more than, almost any subject in the field of surgery, and the subsequent remarks in this paper, with the results described, can be my only apology for bringing up the subject at this juncture. The title of my paper is intended to cover only the internal variety of this trouble.

Dr. J. P. Tuttle, of New York, whom we had the pleasure of hearing before this Association in 1899, and whose authority as a rectal specialist is generally recognized, makes the sweeping statement that "seventy-five per cent. of the human race who reach the age of fifty years suffer at some time to a greater or less degree from hemorrhoids."

We all know the universality of this trouble, and it follows as a natural sequence that the profession is called upon in no uncertain tones for its relief. I shall not discuss the etiology of hemorrhoids, as none has yet been established as being a certain cause in all cases. In one instance alcohol seems to play a part, but on the contrary we have all known the most pronounced sots who were absolutely free from the disease. Indoor and sedentary

habits are sometimes put down as causes, and likewise long hours of standing, heavy lifting, etc., yet we know people by the score following all these occupations who escape absolutely. No cause with which I am acquainted can be set down as a producer of hemorrhoidal disease in every case in which such etiologic factor is present. Fortunately for us, it is not necessary to discover the cause of at least ninety-nine per cent. of all cases in order to cure them absolutely.

I shall take the liberty of quoting from some very distinguished writers and workers in this field of surgery, to substantiate the statement that all methods of operating for internal hemorrhoids so far announced are imperfect and unsatisfactory, and that the active workers are striving for improvement in this line.

The following is from Tuttle, of New York: "The great interest surgeons take in the treatment of hemorrhoids is due largely to the fact that all methods so far devised are more or less imperfect. The ligature method is tedious, painful, slow in healing, and if statistics can be relied upon, is the most dangerous to life of all the accepted surgical procedures in this disease. The clamp and cautery, while efficient and satisfactory in the end, is not an ideal surgical method, for it leaves an open granulating wound which requires three weeks or longer to heal; and in inexpert hands this, like the ligature, may be followed by protracted ulceration and strictures. Finally," says the same author, "the Whitehead operation is too difficult a procedure for the occasional operator to undertake, and when improperly performed is liable to give the worst final results of any."

These are the words of no tyro in surgery, nor occasional operator, but they come direct from one of the most distinguished rectal specialists of the present day, and one known to you all.

Dr. Tuttle pointedly condemns the ligature method as being "the most dangerous to life of all the accepted surgical procedures in this disease," and yet Allingham, of England, says of the clamp and cautery: "As regards danger to life, as far as my most careful researches have led me to a conclusion, it is quite six times as fatal as the ligature." Matthews, of Louisville, in discussing the clamp and cautery method, says: "It cannot be denied that the burning of this amount of tissue causes a very great deal of pain after the operation. No one can say that the iron has had full cautery effect upon every vessel, and therefore hemorrhage is more likely to occur than after the ligature. The period of convalescence is very long; frequently more sloughing of the tissues than was intended takes place; and we all know how natural it is for extensive scar tissue to follow burns; therefore contraction of the anus and rectum is to be feared." The same author says: "I cannot see the advisability of using the clamp and cautery for the removal of hemorrhoids except in a few selected cases." What meaneth all this outcry against these time-honored procedures in the treatment of this most annoying, and often dangerous, ailment, which claims three out of every four, on an average, of human beings for its victims? And the complaint is made, too, not by inexperienced operators, not even by general surgeons only, but by the masters in this special field. Therefore, no one of us has a vestige of right to bob up and say the fault was with the operator, and not the operation. These methods have been faithfully tried, by competent men, and found unsatisfactory, in many instances dangerous and very troublesome, and some of the most skilled operators are the loudest in their condemnation of one and another of the methods.

The plan of injecting hemorrhoids yields beautiful re-

sults in some selected cases, and yet these same leading surgeons warn us to beware of its use, as it is fraught with danger and occasionally proves fatal, but more frequently results in abscess with sloughing. It will be advisable only in selected cases.

Now, having thus reasonably and for good reasons, practically discarded all these methods of treating hemorrhoids, and having on our hands so large a percentage of the human race as sufferers from the trouble, what shall we do? I have a method to propose that is not original, except in its application and some of its details. I saw Dr. S. T. Earle, of Baltimore, do his operation in the winter of 1897–8. His is a modified Whitehead operation, which is not at all the operation of excision which I shall presently describe to you. Dr. C. S. Parkhill, of Hornellsville, New York, claims priority in the excision-with-immediate-suture operation. Dr. Parkhill states that his first operation of this kind was done on June 11, 1898. I saw Earle do the same operation in the winter of 1897-8, and hence he is entitled to priority in this operation. The operation I shall now describe to you briefly is, as I have said, not original with me, except in its application. The patient is etherized, the sphincter thoroughly divulsed, and the hemorrhoids are removed one by one, using the clamp devised by Dr. Earle of Baltimore. The clamp, which I show you, is applied to the base of the pile in its linear axis at junction of normal mucous membrane, and locked. Then, using a double-thread catgut suture, Lee's No. 2 catgut, I begin sewing under the clamp at the mucocutaneous junction, catching the two distal ends of my thread in a forceps. After the needle is drawn through under the pile clamp, one of the threads on the needle side is cut off to facilitate tying. Then, cutting off the pile above the clamp, a continuous suture is carried round and round the clamp, proceeding toward the upper end of the

pile tumor. When the upper end is reached, it is tied, the clamp withdrawn, the suture tightened, and the lower end tied. This procedure is then carried out with each pile tumor till all are removed. I have performed this operation in about twenty-five cases, and never yet have I seen the semblance of a complication, and my results have been perfect, so far as I know, and I have kept track of nearly all my cases. The only objection I can see so far to the operation is that it requires some delicacy of manipulation in its performance. After the operation is completed, only line of suture remains where the pile tumor was previously situated, and the approximation of the cut edges is perfect. The loss of blood is practically nil, and I have never seen the slightest degree of disturbance from after contraction of the anus, and generally about four tumors are removed in each case. An anodyne is often not needed after the operation, and the patients invariably tell me they feel better on the day following than on the day preceding the operation. A patient can return home in one week after the operation, and they usually resume their regular avocations by the tenth day. What more can be said in favor of an operation for hemorrhoids?

Many of the operators of our own city have seen this method applied, and favor it very much, as all its points are preferable to the clamp and cautery or ligature. There is no sloughing, as in the clamp and cautery method, and no constriction of tissues, as in the ligature method, but instead, a neatly approximated and sutured incision, which, in my experience, heals kindly and promptly, and the cure is radical.

DISCUSSION ON DR. M'AFEE'S PAPER.

Dr. Ross: I have seen Dr. McAfee do this operation on a good many occasions, and I have done it with his help, and I have never seen the slightest trouble with his opera-

tion. I have seen men who would have to spend as much as six to twelve hours in bed after each movement of the bowels, and after being operated upon the operation would not give as much discomfort as the movement of the bowels would previous to the operation. So little inflammatory reaction follows the operation that the only reason for keeping them in bed is that they are a little more comfortable. I have done both the clamp and cautery operation and never lost a case by either method, but I think this the cleanest, neatest, and decidedly the most painless operation. I certainly prefer this operation above all others, and am glad that Dr. McAfee has brought it up.

Dr. McRae: While 75 per cent. of the people have trouble with rectum, a comparatively small number require operation. Rectal hygiene cures a large per cent, and ten per cent. would be a large number to require any operative interference. Rectal hygiene should be taught in these simple cases of rectal stasis rather than the idea that everybody needs an operation for hemorrhoids.

This operation is applicable only to internal hemorrhoids. There are two other methods that are better in other cases. Simple incision is often all that is necessary in external tumor. Then there is the operation of Pennington, of Chicago, where the four quadrants are turned out and the mucous membrane incised and then the vessels excised and the parts fall back together and you take out no mucous membrane at all. There is the Rickets operation with the subcutaneous ligation with catgut. These are applicable to internal hemorrhoids. I see far more cases of internal hemorrhoids. I have been operating for a number of years and this operation is not applicable to external hemorrhoids. The clamp and cautery have a field for usefulness in this class of cases. One surgeon has done one thousand operations without a death, a far

less mortality than from circumcision. Death from the operation *per se* is rare indeed. Strictures of the rectum are not due to the particular operation, but to faulty method. If you remove over two thirds of the circumference of the mucous membrane or a small portion of the skin around the margin of the anus, you will have stricture following. Any one of the operations will cure hemorrhoids. Suiting the method to the case will give best results.

Dr. McAfee (in closing): In regard to the rectal hygiene, we all know that is of value, and I have seen cases of hemorrhoids mysteriously disappear without any treatment whatever.

As to the 75 per cent. having to be operated upon, I think the doctor misunderstood me. I was quoting Dr. Tuttle, who stated that 75 per cent. who reached fifty years of age have some form of trouble.

In the ligature operation, the ligature includes the entire base of the tumor and draws from every point, and therefore produces a great deal of pain. If there is any operation which will answer and which produces a great deal less pain and the patient gets well in one half the ordinary time, then that is the operation. The clamp operation all of us have tried, and the hemorrhage is severe after cauterizing and you have to go over it again, and it is a very tedious operation.

As to the skin piles, or skin tags, it is often the case that the internal is connected with the external skin tag.

The operation of Rickets, of Cincinnati, referred to, I would never attempt. He carries the needle up under the mucous membrane and back again and then ties it. The operation which Dr. Earle does is a modified Whitehead operation, and we all know what the Whitehead operation is when turned loose.

SOME GENERAL DISEASES AND THEIR RELATION TO THE EYE.

By J. LAWTON HIERS, M.D., Savannah.

In the hope of eliciting a full and comprehensive discussion I have selected for the title of this paper a subject which, although in its very nature close to the ophthalmologist, is, or should be, of equal interest to the general practitioner. Furthermore, the interdependence of the one on the other awakens a consciousness of the benefit to be derived from a coalition of interests and the exchange of individual experiences.

As exponents of an art having for its chief aim the subjugation of disease, we shall progress in proportion as the results obtained are promulgated, and approach the ultimate goal of a commendable ambition only after an abundance of testimony has pointed the way.

So close is the relationship existing between ocular derangements and many general diseases that, as an eminent specialist has declared, we are frequently reminded that "we are, or should be, physicians first, then ophthalmologists." The recent contributions of literature along this line stamp the statement as an indisputable fact. But with the time allotted for the perusal of this thesis I can not hope to do more than mention briefly, and somewhat categorically, a few of the many conditions illustrative of the ties which should bind us in firmer fraternalism.

It is a noteworthy fact that defective vision is often the first manifestation of chronic nephritis. Before

other symptoms have appeared to arouse their suspicion or to render the consultation of the family physician necessary, this factor frequently leads a patient to the office of a specialist. It is not to be wondered at, therefore, that many cases of chronic Bright's disease are first diagnosed by the ophthalmic surgeon. Bright himself, in 1836, observed and reported cases of albuminuria in which marked effect of sight occurred. Two varieties of albuminuric retinitis have been recognized—the inflammatory and a degenerative type. The two may coexist. While the retinitis may occur with the chronic parenchymatous exhibition of the malady, it is most frequently caused by chronic interstitial nephritis. The retinitis of pregnancy is most commonly attributable to albuminuria, and a similar condition may be found in conjunction with scarlatinal nephritis.

The affection may be unilateral or bilateral, but usually both eyes are involved. On the other hand, sudden blindness may supervene without producing retinal changes, as uremic amaurosis. In wide-spread albuminuric retinitis, however, the degenerative changes are so characteristic that they may be detailed as pathognomonic of kidney trouble. Except in the mildest cases the prognosis, in so far as vision is concerned, is grave; and, as regards the life of the patient, little or no hope can be given, as a large majority die within two years after its appearance.

Diabetic retinitis closely resembles the albuminuric form. Hemorrhages often occur, and sudden amaurosis, as in uremia, may eventuate. The formation of a cataract in one victimized by diabetes is liable, and, in the young, prone to develop rapidly. Paralysis of the muscles of accommodation may supervene, and, lastly, atrophy of the optic nerve. In this class of

subjects a plastic iritis may unfold, "not only after an operation involving mutilation of the iris, but independently of any exciting cause." It is advisable, therefore, on account of the association of these two conditions, to make an examination of the urine in all intractable inflammations of the iris. In addition to the diabetic conditions already described there may occur an amblyopia "in which the visual field is sometimes peripherally intact, sometimes peripherally restricted and occasionally hemianopic, but in which there is a central color scotoma." The significance of diabetic retinitis is not as grave prognostically as is the albuminuric type; and while such an examination may lead to the detection of sugar in the urine, the patient is generally aware of the disease, and already under medical and dietetic treatment. The ocular manifestations of this malady usually exist in chronic cases.

Among the late manifestations of syphilis prone to appear about puberty, is interstitial keratitis. Though affecting both eyes, one is involved before the other. It may persist for months, but generally clears completely. Clear vision, however, may be prevented by the opacities apt to follow in its wake. Slight optic neuritis is a further accompaniment, and traces of iritis almost always become evident. The subjective symptoms will vary according to the location of the principal changes in the retina—the rule being "the more severely the macula suffers the poorer will be the vision." The interstitial keratitis of acquired syphilis is more responsive to specific medication than if the disease be hereditary; and, according to Callan, while we cannot prevent its occurrence, we can delay its appearance in the second eye. "Inflammation originating in the tarsus is nearly always syphilitic" and generally yields to appropriate constitutional treatment.

In a paper presented originally to this body several years since, it was my pleasure to speak of malaria as a favorable factor in asthenopic conditions. Since then new evidence can be adduced to fortify the opinion then advanced. Besides the universally accepted subjects of neuralgia and dendritic keratitis, two contributions have recently been published in which malaria has been proven as a cause of cataract; and, as one author declares, "this cause is doubtless more often operative in malarial districts than we can prove, as the constitutional condition which goes with a chronic malarial cachexia is favorable to the arrest of those processes necessary to lenticular transparency." Outside of large malarial foci, however, evidences of paludism are seldom encountered. The most frequent disturbances are optic neuritis, with its accompanying symptomatology, neuro-retinitis and hemorrhages of the retina. Conjunctivitis, keratitis, iritis, and other inflammatory disorders of the ocular apparatus may occasionally be traced to paludal infection. Cases of amaurosis occurring in intermittent fevers must be grouped with malarial choroido-retinitis, "in which there are emboli of melanotic leucocytes in the capillaries," which can be demonstrated by the microscope.

Woodruff maintains that "the great amount of muscular, fibrous and vascular tissues around and in the eye make the organ especially prone to rheumatic disorders." The conjunctiva or cornea may be affected by gout; and, according to Trousseau, "so-called idiopathic edema of the lids is generally arthritic." Acute or chronic articular rheumatism is a predisposing factor in inflammation both of the iris and ciliary body; and when present may affect one or both eyes. Relapses occur with relative frequency; and Norris and Oliver, in their admirable work, contend that, under ordinary

circumstances, recurrent retinitis may be attributed to rheumatism. Ciliary redness, lacrymation and photophobia are characteristic of typical cases. The accompanying pain, of paroxysmal nature, may become so intense as to deprive the patient of rest absolutely. If treatment is commenced early in the disease the prognosis is good, notwithstanding its trend to periodicity. Marked benefit is apt to follow the administration of the salicylates, together with due regard for the diet and climatic influences.

Landesberg's table shows that in 270 cases of smallpox "affections of the lids were found in 1.11 per cent.; conjunctiva, 57.78 per cent.; lacrymal apparatus, 5.5 per cent.; cornea, 30 per cent.; iris, 2.9 per cent.; and uvea, 1.48 per cent." In the stage of desiccation the cornea is usually affected by an ulcerative process, but pustules may appear on the conjunctiva. Accidental inoculation may cause the formation of vaccine vesicles on the lid-margins. They may develop into a severe ulcer involving the bulbar conjunctiva.

Under certain conditions the eye symptoms alone may make possible the diagnosis between hysteria and certain diseases. This point may become important in medico-legal considerations. For example, eye pain, headache, poor vision, a practically normal fundus, are characteristic both of hysterical amblyopia and retrobulbar neuritis. In the former condition, however, the pupils are normal, whereas, in the latter state they are large and sluggish. There is a concentrically contracted field in the former, while in the latter a central scotoma exists. There is an anethesia of the conjunctiva in hysteria which, according to Ellett, is lacking in neuritis. Recent severe exertion, exposure to cold and infectious diseases are general factors indicating the probability of neuritis in the diagnosis of doubtful con-

ditions. While the ocular manifestations of hysteria are numerous, they are, in a general way, characteristic; and if the fact be remembered that they are assignable to a functional anethesia of the organ, little difficulty should be experienced in recalling and comprehending the more common symptoms.

Appreciating, in conclusion, the impossibility of doing full justice to so broad a subject within a limited period of time, I have, at the risk of appearing abstruse or pedantic, been forced, unwillingly to indulge extensively in technical phraseology. It was my purpose, however, in view of the more common general diseases which demanded consideration, to say the most in the fewest words, which fact has precluded the possibility of elaborate explanations and necessitated the employment of terse sentences. In brief, I have endeavored to present the commoner ocular disturbances of albuminuria, nephritis, diabetes, syphilis, malaria, rheumatism, smallpox and hysteria, without transgressing the domain of pathology or treatment.

Resultant and not hypothetical nor curative factors have been considered. Much more can and should be said. Many more conditions could be involved, and their respective manifestations discussed, but with deference to your patience my remarks must have an end.

THE ANTISEPTIC INHALATION TREATMENT OF PHTHISIS.

By M. SALIBA, M.D., Savannah.

Phthisis is a specific disease caused by the tubercle bacillus. It is the commonest form of tuberculosis of the lungs, though not the only form, but acute miliary or general tuberculosis has a clinical course and features of its own, so that clinically it is rightly distinguished from what is ordinarily understood as phthisis.

Pulmonary consumption must now be regarded as an infectious disease, originating in the introduction into the lungs of a specific infective organism from without, the development and spread of which depends on its encountering a suitable soil or an inherited predisposition for its culture and growth.

We must regard the impairment of nutrition which we encounter in this disease, and which it will tax all our resources to arrest or check, not as the cause, as was formerly taught, but as a consequence mainly of the infective fever which attends the development or the activities of the infective organism in the lungs, as well as in other organs.

It is in the nature of pulmonary tuberculosis to cause progressive destruction of the organ it attacks. If any portion of the adult lung is destroyed, it can never be restored to its former state of integrity. If a large portion is destroyed, it must ever remain so. It is clear, then, that the restoration of a lung to its former state of integrity in a case of phthisis must be of the rarest occurrence, but we can arrest the course of the disease, and so remedy cases, even when the disease is far advanced.

It should be remembered that a remedy which may be most efficacious in the earliest stage of phthisis is not in the least degree less a remedy for phthisis because it fails to produce a great result in more advanced cases; also that a remedy which may be efficacious in arresting the progress of the disease in one person—in one organism—will not be in the least degree less a remedy for phthisis because it fails to arrest the disease in another organism.

The treatment of phthisis is a subject to which much study has been devoted by many of the most eminent men in the medical and scientific world. That much remains to be accomplished in this direction is sufficiently evident from the enormous death-rate.

But by antiseptic inhalations, the following indication for the treatment of phthisis is best accomplished: "To endeavor to antagonize the influence of the infective organism on the lung tissues and on the constitution. To attempt to hinder its extension to the sound part of the affected lung, and also to the sound unaffected lung, and to prevent the infection of other organs."

It is impossible, in the rational treatment of phthisis, to lose sight of the fact that there is an infective organism not only developed and developing in the lung, but actually diffused through the mucous and muco-purulent secretions in the air-passages.

We know that the tubercle bacillus, in the vast majority of cases, reaches the lung from without, that it is taken in with the inspired air, and finding in the lung the conditions suitable to its existence and multiplication, it lives and multiplies there. Now, if we alter or disturb those conditions we will arrest its vitality or modify and diminish its morbid activity.

There are two channels by which we can attack and influence the infective organism in pulmonary phthisis: one is the very same channel by which it most commonly gains

access to the organism, the air-passages of the lungs; the other is the blood.

There are two conceivable methods by which we can influence the life and activities of the bacillus: first, by producing conditions more or less directly hostile to its existence—*i. e.*, directly anti-bacillary; second, by increasing the resisting power of the pulmonary tissues to its attacks.

But it will naturally be asked, what has been the practical gain from the use of antiseptic remedies. We have seen it stated, and with authority, that the use of antiseptics in the treatment of phthisis has been attended with no good results. My own personal experience, as well as the recorded experience of the most competent and experienced observers, in this and in all other countries of the world, proves the inaccuracy of this statement. It is possible to get good results, or no results, from the use of antiseptic agents, according to the amount of judgment exercised in the selection of cases, according to the amount of sincerity, earnestness and discrimination with which we employ the agents at our command, and according to the amount of cooperation and good faith we encounter in our patients.

We shall often find it impossible, with phthisical patients, to induce them loyally to follow any plan of treatment which requires constant trouble and attention; and it is extremely difficult to induce patients to breath an antiseptic medicated atmosphere of sufficient concentration and with sufficient continuance to be of any real efficacy. But when patients have patiently, perseveringly and adequately carried out the use of antiseptics by inhalation, I have seen remarkably good results.

The antiseptic inhalations are of great additional utility, and while, of course, none of these things have the least specific effect on the bacillus, they do influence materially and definitely the course of pulmonary phthisis as we see it clinically.

Since using antiseptic inhalations in the treatment of phthisis I find, even in far advanced cases, that when used continuously the progress of the disease is rendered much slower and quieter; and, compared with my former experience, I find the extension of the disease to the unaffected lung is remarkably delayed. Indeed, it is in preventing the extension of the disease to the hitherto sound lung, and in preventing laryngeal infection, that we consider this method so valuable and so important.

There can be no question that the antiseptic inhalation treatment, when a patient devotes himself very thoroughly to it, tends to exert a curative influence on the tubercular lesions in the lungs by promoting sclerotic changes. It diminishes the expectoration, lessens its purulency and removes any fetor it may possess. It reduces the extent of the catarrhal lesions in the air-passages, thereby aiding a better introduction of the air into the lungs, and so reducing considerably the area of pulmonary changes. It increases the respiratory capacity, which is very limited in tubercular patients. It keeps the pulmonary passages in an aseptic condition and prevents the danger of new invasion by tubercle bacilli. It prevents the mixed infection which is brought about by the combined action in the lungs of the bacillus tuberculosis and the pus-forming germs, the streptococcus pyogenes aureus. It leaves the alimentary tract undisturbed by drugs, giving ample opportunity for the increase of vital resistance by suitable diet and constitutional treatment, and in many cases marked improvement in the patient's state occurs during its use, even in far advanced cases. The antiseptics cause a diminution of the irritating qualities of the sputum and render a real service in therapeutics.

We have no better means of checking the influence of the infective organism on the lung tissues and on the constitution than the energetic use of disinfecting and anti-

septic methods by means of the inhalation of the vapors and pulverized solutions of these agents. By reducing these injurious processes, we shall always be able to confine the disease itself, or rather the complex pathological processes of which it consists, within narrower limits, and to lessen their influence upon the diseased organism as much as possible.

The antiseptic inhalations are to be urgently employed in all advanced cases. In the treatment of the most simple wound or external ulcer we cleanse it with the most scrupulous care and apply antiseptic dressings, while in this frightful disease the whole surface of the respiratory tract is covered with decomposed secretions, septic pus, and with myriads of fermentative bacteria, which may exercise unhindered that influence over extensive tracts of the most vital organs which we try earnestly to avert from the slightest wound.

By inhalations of antiseptic agents we not only obtain a far more thorough cleansing of the air-passages, the bronchiectasic dilatations and cavities than has hitherto been effected, but mycotic processes and decomposition of the secretions are arrested and thus the absorption of poisonous substances is also checked.

For all the antiseptic medicaments which are intended to act locally, direct application is the only rational method of administration. This secures the direct primary action of the agents without having undergone chemical changes and without disturbing the digestion, secretions and other important functions.

The air-passages are accessible to direct medication only through the air inspired, and this may be modified in respect of its temperature or of the amount of moisture it contains, or by the addition to it of therapeutic remedies in the form of gases or of the vapors of volatile substance. Gases or vapors mixed with the air are easily car-

ried, of course, to the most distant parts of the respiratory organs.

The following are the chief volatile antiseptic substances that are used for inhalation: carbolic acid, creosote, tar, turpentine, terebene, sanitas oil, camphor, benzoin, iodine, thymol, menthol, iodide of ethyl, eucalyptol, oleum pini sylvestris, formaldehyde, ichthyol, and iodoform dissolved in ether.

Any of these may be used of suitable strength, either alone or in combination. They may be used in the "dry" form; that is, dropped on dry sponge or tow of an inhalation respirator; or in the form of a steam spray; or they may be diffused through an apartment by wetting cloths with them and suspending them in the room, or by pouring them on hot water, or placing them on heated plates, or by playing a hand spray about the room—these and various other simple ways will suggest themselves to every one.

Hot air inhalations are used extensively and more or less successfully when troublesome cough or profuse expectoration are present. The temperature of the inhaler should range between 300° and 400° F.

Moist, hot inhalations are useless, if not absolutely harmful. Cold, moist inhalations as generated by a multinebulizer are of undoubted value in prevention and cure of pulmonary tuberculosis. This form of inhalation is also useful as inducing deep breathing by which we call into exercise the healthy lung tissue, and possess and cause better aeration and better blood supply. The bacilli of tuberculosis can not act, provided the aeration of the blood is perfect. The number of germs in the atmosphere is of little moment provided there is perfect aeration of the blood.

The nebulizer is the most perfect apparatus for the purpose of direct medication; either volatile or non-volatile.

Fortunately this rational method of treatment, by inhaling antiseptics from a nebulizer, is rapidly coming into general use, though there are many physicians who still adhere to the old way of stomachic or hypodermic medication, even when a purely local action on the pulmonary tissues is desired.

Recent experiments have established beyond a possible question the fact that nebulized vapor will reach the mucous membrane of the nose, mouth, pharynx, larynx and bronchi, and even penetrate to the epithelium of the air cells. The experiments at the Académie de Médecine proved that antiseptic inhalations could be inhaled deeply into the respiratory tract. Demarquay (Gaz. Medic. de Paris, 1861, p. 616) was able to show the presence of an inhalation of perchloride of iron, for which he tested with cyanide of potassium, in the vesicles of the lungs, as Lewin (Die inhal. therapie, Berlin, 1865) also did in a cavity. H. M. Thomas (West. Med. Rev. 1899), in discussing the treatment of pulmonary tuberculosis, states that he has seen proof, microscopically, that vaporized drugs may penetrate the pulmonary alveoli.

The pneumatic cabinet is an invaluable adjunct to the nebulizer in the administration of the antiseptic inhalation treatment. The rarefaction of the air within the cabinet causes the lungs to expand to a greater degree than common, and also obviates the necessity of an effort on the part of the patient to take deep inspirations.

A candid consideration of all methods of treatment in phthisis emphasizes my belief that they are merely collateral agencies. But when we consider the cause and nature of the disease and its method of development, it seems perfectly apparent that the inhalation of antiseptic agents from the nebulizer and the pneumatic cabinet is one of the most valuable methods of treatment that can be employed.

There is nothing can give the results, aside from the antiseptic inhalation, that can be obtained with the open-air treatment. If these two agents can be employed in conjunction almost any case can be benefited if not seen too late.

My method of treatment is the combination of these two agents. The patient has to come walking, if possible, to the office twice or thrice daily for the inhalation treatment. I use Saliba's mixture of antiseptics, which contains the following substances: beechwood creosote, pure carbolic acid, eucalyptol, compound tincture of benzoin, etheris tincture of iodine, terebene, menthol, thymol, chloroform, iodoform, biniodide of mercury, oil of pinus sylvestris and balsam peru.

The inhalations of this mixture are of sufficient concentration to be of great efficacy and to arrest the growth of the cultivated bacilli from phthisical sputum. This mixture is made slightly alkaline in reaction, and therefore not irritating to the sensitive mucous membrane. It has the property of dissolving mucous and pus and all albuminous matters, and so allowing its antiseptic agents to reach the offending organisms directly.

Inhalations of from two to twenty minutes are given to phthisical patients twice or thrice daily. The results vary more or less in proportion to the severity of the disease and the amount of recuperative power possessed by the patient.

At the expiration of a week or two of treatment the patient begins to notice a change for the better. The fever is lessened in severity, the strength increases, the breathing grows easier and the cough becomes less violent. The patient commences to gain in weight and his general appearance shows a decided improvement.

The results obtained by this method of treatment are best shown in the following report. There have been thirty-

four cases under my treatment since March, 1902, who faithfully followed the above plan. Of these there were:

Stage of Disease.	Number of cases.	Number cured.	Number unimproved.	Number died.	Still under treatment improving.	Arrested.
First.....	10	8	...	....	2	....
Second.....	18	9	...	....	5	4
Third.....	6	2	1	1	1	1

Therefore, it seems, so far, that of the first stage cases 80 per cent. were cured, of the second stage cases 50 per cent. were cured, while of the third stage cases 33⅓ per cent. were cured.

I refer to the above cases as cured, since they have at present no constitutional symptoms, and as far as any examination can carry us they are all physically perfect. Whether or not the old tuberculosis will recrudesce and a fresh outbreak occur years after the primary disease has been cured is still an open question.

REPORT OF SOME CASES IN EYE AND EAR PRACTICE.

By J. H. SHORTER, M.D., Macon.

Instead of a thesis of an academic or didactic nature, so many of which are read at all medical meetings, it seemed to me that the report of a few cases somewhat out of the usual might be of interest, although such cases having little if any relation to each other, the general contents of the paper may appear disconnected. Such reports, however, may tend to recall experiences of similar nature in the practice of other men, and so provoke discussion, which, after all, is often the thing of chief value in medical gatherings.

In each division of medicine a large part of one's work is made up of what we call ordinary cases, the treatment of which takes up most of the daily routine of the practitioner. In gynecology, certain leucorrheas, uterine displacements, etc. In dermatology, eczema, acne, etc. Rhino-laryngology, catarrhal conditions of the upper air-passages. Otology, chronic middle ear trouble. In ophthalmology, conjunctivitis, errors of refraction, etc.

The care of every patient should of course be of concern to the conscientious physician, and should be given his best care and attention in effort to benefit the sufferer; but every one who is interested in the scientific as well as the humanitarian side of our profession cannot but feel greater interest, and to a certain extent a pleasurable excitement, when a patient with some rare or obscure affection presents himself; and the rarer the disease with which he seems to

suffer, and the more it tests our power of diagnosis, the keener the interest it gives one who enjoys the investigation.

The greatest advantage afforded one who is connected with a large hospital, in a large city, is the opportunity for clinical research. This, to the same extent, we who practice in small cities cannot have, but I have thought that the joint experience of several men in active practice may, in the aggregate, amount to a good deal of material, and I have thought it might be well to record many of our rare experiences and the uncommon cases that sandwich themselves in between those of our daily routine work.

The first two cases I report are contrasting ones, and excellent illustrations of how largely the personal factor enters into the symptoms and should be taken into consideration in treatment. Neither was otherwise of pathological interest. Mr. H, from Dodge county, consulted me, complaining of fatigue on using the eyes for near work. The asthenopic symptoms were of short duration; only a few months since he began to feel fatigue in reading, although he was over twenty-five years old and a university graduate. Examination revealed a mixed astigmatism; one diopter in one meridian, and four diopters in the other, the eyes otherwise healthy. Correction of the refraction error relieved the eye-strain.

In contrast to this was the case of a young lady of twenty-two, fairly well nourished, and in physical health, but neurotic. She had had for some years such trouble with the eyes that she had been compelled to give up all near work. Examination showed perfectly healthy eyes, media clear, fundus normal, no heterophoria. Thorough testing under atropin brought out as only error of refraction an astigmatism of less than half diopter in one eye, one fourth diopter in other. She was fitted with glasses, and experienced almost

complete relief. I am skeptical of relief afforded by such very slight correction, but suggestion I do not think entered into this cure, for by way of control experiment I put plain glasses on her and also one fourth diopter spherical, but she experienced no relief with any but the cylindrical.

I think that we can call these two contrasting cases; one of them with a prodigious error of refraction, who to the age of twenty-five had done a large amount of close work without discomfort. The other, with the minutest error, had been incapacitated for use of the eye. They illustrate well that vital something we call the personal equation.

The second report had also to do, and entirely, with that something we are running against constantly in our practice, which perverts so many symptoms and makes otherwise plain physical signs often so difficult to interpret correctly—i. e., the neurotic element. Miss G, twenty-one years old, unmarried, a well-nourished, rather robust looking girl, was referred to me on account of an almost total aphonia which she had labored under for many months. She had undergone treatment from two or three physicians without any especial benefit. A careful examination showed no intralaryngeal inflammation, no papilloma or other growth, no paresis of adduction. By exclusion, the only diagnosis was hysterical aphonia. I used electricity, which in several previous cases I had found rapidly relieve the condition, but in this patient there was very slight and transitory improvement. There being seemingly no change in the status of things after a week, I decided to try hypnotism. She was a very tractable patient, and yielded rather promptly, ten or fifteen minutes being sufficient time to put her in rather sound sleep. These séances were repeated at daily intervals for three times, assuring her on each occasion that on the fourth occasion I would use a remedy which would certainly restore her voice at once. The last treat-

ment consisted of stroking the throat with turpentine liniment. On answering her, and telling her to talk out loud, she did so, and the voice has remained clear ever since. That is, I have not heard of her having had any relapse, though if such occurred it would not surprise me. I have not much faith in the therapeutic efficacy of hypnotism itself, but in this case it acted well, the explanation of which is, I think, that it put the patient in what may be called a perfectly receptive condition for the complete influence of suggestion. The latter alone had not proved curative in her case, for two physicians had each given her a promise of relief, only to be disappointed.

Just here might come in a question of ethics as to whether we are justified in deceiving a patient, even if convinced of its being of benefit. And I may also venture on the question, do we, as physicians, usually take sufficient pains to put ourselves *en rapport* with our patients' mental individuality, or make sufficient study of their physical or emotional being? I think not; and just here is sometimes the weak spot of the otherwise able physician—and the stumbling-block by which we are tripped up by the shrewd charlatan, or the crank enthusiast. For we cannot shut our eyes to the fact that it is certainly the case that the patients are only too many who, having frequented the consulting-room of competent men without betterment, have found relief at the hands of the faith-curer, the mental healer, the Christian Scientist, or any of the dozen other like quacks.

Every well-known shrine has its pile of discarded canes and crutches as testimonials of cures effected in persons of the devotees who worshiped there. Clinical experience teaches us that such trumpery cannot cure an organic defect; but certain it is that oftentimes functional ailments have been cured which had been previously treated without result, and even victims of incurable organic diseases

have been benefited, cheered up, and made more comfortable, whether by influence of imagination or what-not.

My next is a throat case, which deserves, I think, more than passing mention.

I was called in consultation to see a man of thirty, who had been sick for five days with an affection of the throat. He was not confined to bed, but had some fever, pain in the throat, and difficulty in swallowing. Inspection showed a dirty tenacious membrane covering site of the left tonsil, a less amount on right tonsil. It looked like necrosed tissue, not like follicular tonsillitis. Very considerable cervical adenitis. Not spreading on the fauces, small systemic depression, age of patient and other symptoms negative diphtheria in any diagnosis, nor was Klebs-Lœffler bacilli found. I made diagnosis of streptococcus infection. I was called again three days later by his physician, as patient was complaining of increased distress. I found that the sloughing was greater, pain and temperature had risen, dysphagia had increased, as had the glandular enlargement. Under cocain, I curetted very thoroughly all the tonsillar area, removing a large quantity of necrosed tissue, and swabbed with carbolic acid. Improvement was immediate. In twenty-four hours temperature had decreased to normal, pains and dysphagia, largely disappeared and glandular enlargement was much less. He was so much better I told his physician it was not necessary for me to see him again. Although no history of syphilis could be obtained, he had been placed on mercury, and in a comparatively short time developed well-marked ptyalism. The gums became very much swollen, mastication painful, and abundant secretions of viscid saliva.

I was called again four days later; I found the above mentioned mouth symptoms very marked, and the parotid, and submaxillary glands greatly swollen, making it difficult to palpate the neck. The symptoms were all those of

salivation, excepting that the teeth were not loosened. Pulse was seventy-six and temperature ninety-nine. Strict attention as to cleansing the mouth and teeth made the patient very much more comfortable, and the symptoms considerably modified. This favorable condition remained for a week, when I noticed an acceleration of pulse and rise of temperature; then, for the first time, I was able to detect, on deep palpation, a cord-like feeling in lower part of left side of neck running down to the clavicle.

Superiorly the enlarged glands interfered with palpation. The diagnosis was made of septic jugular phlebitis and probable sinus thrombosis. The patient and his friend would not consent to operation, and he rapidly developed all signs of profound sepsis, and died not many days later. I have regretted that I did not make use of antistreptococcus serum, or try intravenous injections of formalin solution, after the manner of Barrows, though judging from recent reports of other men who have tried this latter procedure, I am skeptical as to its value. Probably the patient would not have consented even to having these things done.

I regard this case as a decidedly instructive one, and one which illustrates most forcibly how insidious may be the dangers of profound and fatal systemic infection from septic lesions about the tonsillar region. Had there not been so much swelling and glandular enlargement which prevented palpation, I would doubtless have discovered earlier the phlebitic involvement, and by proper surgical intervention, that is, opening the sinuses and curetting out the septic thrombus and resecting the jugular, his life might have been saved.

The next is one of a series of cases, five or six in number, which I have studied with a good deal of attention since living in the South. They teach no special principle but are of interest from a pathological standpoint.

One is a type of all, simply varying in degree. All are in young women, and all in colored people. Out of an immensely larger clinical material in New York I saw many times fewer of these cases proportionately, and these were also invariably in young women, and all that I can recall were dark brunettes. Kerato, or sclero-uveitis anterior, seems a good name for it, for it is difficult to decide whether it begins primarily in the uveal tract, or if the cornea is first affected.

Mary Burnette, colored, house servant, came complaining to me of the left eye which had given her trouble for three years. The attacks came on at irregular intervals and were attended by redness of the ball and some pain. As each attack subsided it left the sight poorer. Examination showed a dense opacity of cornea spreading concentrically from the limbus towards the center, deep pericorneal injection, some posterior synechia, but pupil still reacting to light. The center of cornea remained transparent, but the lens was cloudy and the vision reduced to 20/100. Under confinement to bed, hot fomentations and atropin, the eye became quiet after two weeks and the acute symptoms, redness, tenderness, etc., disappeared.

The eye remained well so far as acute inflammation was concerned for more than two months, when a relapse occurred, the same symptoms presenting themselves as described above, with, in addition, a decided minus tension, brought up to normal by uses of atropin. This attack was similar in its course to the previous one, but with more tedious convalescence, and during this attack the disease began in the fellow eye, which had been previously healthy.

I have treated this woman many times since, each attack being longer and the intervals of repose somewhat shorter. After each relapse the general condition was less and less favorable, and degeneration more marked. When I last saw the patient the eye first affected was entirely blind,

complicated cataract, chalky lens, and the other eye had only 20/200 vision, which will eventually also be lost; this trouble has evidently an underlying constitutional cause, but the dyscrasia at base of it I do not know.

I am convinced that syphilis had no part in it. Lues is prevalent enough with negroes, but is certainly more common with men than with women. As to treatment I found nothing of any except temporary benefit, and I tried many remedies. In most of the cases I pushed specific medication to full extent, but found no advantage from it, nor from subconjunctival injections of sublimate. In cutting short the acute attacks, rest in bed, hot applications and atropin were of decided advantage. The exhibition of salicylates in large doses was of undoubted benefit. In some of these cases the menstrual period seemed to have influence.

The next case I report simply to illustrate how much benefit can be given even in a most unpromising condition by constant, painstaking, routine treatment, especially when the patient will do his part by faithful attendance.

Mr. C. W., locomotive engineer, aged forty-eight, of good family and personal history, was referred to me by a medical friend for examination of eye and ear, to ascertain, if possible, the cause of a most distressing vertigo, from which he had suffered for several years, and which had constantly grown worse, until he had become entirely incapacitated for his work. When I first saw him he stated that the condition had become so bad that he hardly dared cross the street without assistance for fear of falling.

The examination of the eyes was negative; that of the ears showed nothing objectively abnormal, excepting some retraction of the membrane. The hearing was very slightly impaired on left side, somewhat more on right side, in which there was a little tinnitus. On right side there was posterior hypertrophy of the lower turbinate, and the eustachian

tube was seemingly somewhat strictured. The drum cavity could not be politzerized on this side. I told his physician and himself that there was something of the complex of Ménière's symptoms, but that it was impossible to say how much of the vertigo, if any, depended on the aural condition; that it would be rash to promise any benefit from treatment, but that it could only be ascertained by trying,

Treatment consisted in the removal of the posterior hypertrophy with the snare, daily use of eustachian catheter and massage with Siegel otoscope. Improvement began after one week's treatment, and progressed steadily for three months, until the patient pronounced himself so nearly relieved that he would start to work again immediately.

DISCUSSION ON DR. SHORTER'S PAPER.

Dr. Stapler: I am glad to know that Dr. Shorter reverses himself in his position on curing of incurable disease. He took the position in regard to deaf and dumb patients that they could not be cured. Now he says that incurable disease can be cured by methods which he cannot exactly understand.

Dr. Mitchell: Referring to the two cases of refraction reported by the essayist: Fatigue of the ciliary muscle produces a train of symptoms, such as brow pain, various types of headache, nausea, etc., known as asthenopia. In many cases of astigmatism of low degree the vision is perfect, or approximately so, but since the astigmatism is corrected by nature through the intervention of the ciliary muscle, the asthenopia is severe, while conversely in many cases of astigmatism of a higher degree the vision is no better than from 20/40 to 20/120, yet asthenopic symptoms are either altogether absent or exist to a limited extent only.

Patients who belong to the first class usually seek relief from the asthenopia, while those of the second class quite

as often ask for a better acuity of vision. The explanation of this apparently anomalous condition is as follows: In an individual with a low degree of astigmatism there is an uncontrollable desire through unnatural and involuntary action of the ciliary muscle to correct the error, which results in fatigue of the muscle of accommodation and we have as a consequence the symptom complex known as asthenopia.

On the contrary, an individual with a high degree of astigmatism has poor vision under any circumstances; the muscle of accommodation not being able even to approximately correct the refractive error. In the one case we have asthenopia due to fatigue of the ciliary muscle in a more or less successful effort to execute the orders of the brain centers for sharp vision.

On the other hand, it being impossible for the ciliary muscle to correct the refractive error, the brain centers make no demand for sharp vision, hence the muscle of accommodation remains approximately in a state of rest, with the result that the individual has poorer vision but less asthenopia.

Dr. Shorter (in closing): Dr. Stapler is mistaken in thinking that I have reversed my ideas on deafness. Yesterday I made a remark that almost all cases of deaf-mutism were labyrinthine trouble and deep-seated troubles, and that in those cases treatment was simply throwing away time unless directed to the source of the trouble. This last case which I mentioned was really about the middle ear and fortunately turned out very well.

As to the case mentioned by Dr. Mitchell, this patient had only 1-4 diopter hypermetropia, and in such a small amount as this you get little if any symptoms at all. Personal equation no doubt plays a part with these cases.

SPINAL CURVATURE.

By THEODORE TOEPEL, M.D., Atlanta.

It would be impossible for me to do the subject spinal curvature justice in a brief way. I have therefore selected that portion which I think will be of interest, and which occurs most frequently, namely, the acquired form of lateral spinal curvature.

In this seemingly small portion of the main subject it is not my idea to cover all the details, but shall only point out a few conditions that are most commonly met with.

To define lateral curvature briefly, I would say it is a deformity of the spine which is characterized by lateral deviation and distortion or rotation of the spinal column, nearly always accompanied by a more or less exaggeration or diminution of the anteroposterior curves.

The causes of acquired lateral curvature are manifold; some of the most important and those most frequently met with are: Asymmetry of the head, asymmetry of the pelvis, short leg, and asymmetry of the spine itself. Asymmetry of the head is a factor not often taken into account. Ocular defects, causing improper balance of the head, are an obvious cause. Asymmetry of the pelvis, as described by Barwell, is accounted as a not infrequent cause of asymmetrical positions. The shortness of one leg is so common that it fails to attract the attention that it deserves. Asymmetry of the spine itself and unequal thickness of the vertebral bodies on the right side, as contrasted with the left, is a demonstrated condition.

All these defects of conformation must lead to some lateral deviation of the spine. It depends upon the individual whether these are taken care of by nature in some compensatory way, or whether they cause a deviation notable enough to be classed as deformities.

Aside from the structural defects, causing asymmetry and consequent lateral deviation, are to be found the faulty postures resulting from attitude and occupation, which must be accounted another important factor in producing lateral curvature. Habitual lateral bed postures curve the spine. By favoring the growth of the spine on one side and retarding it on the other, there is a tendency to fix a lateral curve by establishing physical changes in the bones and ligaments.

The twisted position in writing, as generally practiced, is more frequently than anything else an initial cause of many lateral curvatures. When examining for lateral curvature, after having noted the kind and degree of curvature, let the patient sit down and write his or her name. Nine times out of ten the patient will have placed himself in a posture corresponding with the form of the curvature, except that usually it is highly exaggerated. Playing the violin in the usual standing position has, no doubt, contributed to bringing on lateral curvature. Other similar causes might be enumerated, but the aforesaid will suffice to look for these and related conditions in examination.

The usual history given is that the mother or dressmaker has noticed one shoulder-blade or hip-bone growing out. Then at a convenient time the family physician is called in. Generally he does not strip the patient below the hip bones and then tell him to bend the trunk forward, but often he only passes his hand down the back over the clothing. If there is no decided or marked irregularity of the back when examined in this haphazard way, the

doctor often assures the anxious mother that the patient will outgrow it, and that nothing special need be done, except, perhaps, to lie down for two or three hours daily, or to use dumb-bells or callisthenic exercise.

Pain and backache, generally of the loins or under or in the neighborhood of one shoulder-blade or between the shoulder-blades, are the first symptoms observed in a large number of cases. This is frequently attributed to something entirely different, and treated accordingly.

The prognosis in most cases is favorable, if presented in the early stage, and when there is no osseous deformity present such patients can be assured complete cure. If osseous deformity is present the case is incurable. Before lateral curvature with osseous deformity can occur, it must gradually pass through many intermediate stages from the time the patient first began to assume a temporary faulty position of the trunk.

Most surgeons are now agreed that in lateral curvature osseous deformity is preceded by so-called postural deformity. As soon as osseous deformity is present, not only do the individual vertebræ become wedge-shaped and misshapen with the attached ribs, but the actual bony fibers of the spongy tissue of the bodies of the vertebræ participate in the deformation, and show in sections from above downward a twisting corresponding to the rotation deformity of the whole adjacent group of vertebræ.

When accepting a case of lateral curvature for treatment, I make it a rule to note the lateral deviation carefully, and at regular intervals make comparative notations of the improvement. A strip of adhesive plaster two inches wide is placed over the vertebral column. With a colored pencil the position of each successive spine is marked on the adhesive plaster. I also mark the level of the tips of the scapulæ on the corresponding margins of

the plaster; also the transverse line between the posterior superior spines of the ilium is drawn to record any possible lateral tilt of the pelvis. The adhesive strip is now removed to a book where these records are kept. With a straight-edged ruler a line is drawn between the position of the seventh cervical and first sacrum spine. The amount of deviation in centimeters is easily measured. It corresponds to the distance from this line to the farthest removed dot on either side.

Of late the implicit faith formerly placed in the treatment of lateral curvature of the spine by steel and other spinal supports or stays has been gradually undermined, and even those who still adhere to the mechanical treatment of spinal deformities not due to diseased bone attach increasing importance to its association with suitable prescribed gymnastics.

The treatment is based upon principles which may be taken under the following heads:

(a) Re-education of the patient's muscular sense as to an erect and improved position. This re-education of the muscular sense for the improved and normal posture is to be kept in mind throughout the whole treatment.

(b) Improved position to be always maintained while sitting, standing or lying. The best possible posture is to be maintained while sitting, whatever the occupation of the moment may be. It is most readily obtained by sitting with the sacrum, loins, dorsum and shoulders well supported against the back of the chair, which should be moulded to the normal shape of the spine. Standing at lessons, or any other occupation, should be avoided when possible; when unavoidable, the patient ought to stand on both feet with heels three to four inches apart. Standing on one foot is most injurious, as it at once throws the spine into a serpentine

position. A short leg may be compensated by a thicker sole. As the time spent in sleep is from one third to one half during the growing period, a proper bed posture is an important factor in the treatment.

(c) Attention to dress. It is essential that no article of clothing should interfere with the resumption of an improved and perfectly normal position of the patient's spine and trunk.

(d) Systematic training of the spinal and other muscles, including the development of the thorax. The exercises are divided into three distinct sets, varying according to the patient's requirements, namely: (1) exercises where the patient lies on his back or abdomen, extension from the sacrum upward, or suspended from rings, bars, or Dr. Schmidt's spinal stretcher, extension from neck downward; (2) exercises in sitting; (3) exercises in standing.

In case of non-osseous or postural lateral curvature five to six months' daily treatment will effect a cure of the deformity, while in cases with osseous or incurable deformity one year's daily treatment will effect all the improvement that is possible. Very severe cases, especially those associated with much pain, require a longer period of treatment. The great advantage of this treatment of lateral curvature over that by spinal supports is that it always tends to improve the general health of the patient, notable in delicate, anemic and poorly nourished boys and girls at the onset of puberty.

(e) Attention to general health. Care should be taken to improve the general health in every possible way. A nutritious diet should be prescribed. A daily bath with cold or tepid water, if the patient's powers of reactoin are low, should always be insisted upon as a general tonic. At least one and a half hours to two daily outdoor exer-

cise should be prescribed. Very frequently patients gain at the rate of half a pound to a pound every week.

(f) Subsequent home treatment to prevent a relapse in the improvement or cure that has been accomplished. To keep up the improvement and to prevent relapse in a cured case, it is necessary to give the patient, on leaving, a written home prescription of exercises.

DEAFNESS; ITS PREVENTION AND CURE.

By M. M. STAPLER, M.D., Macon.

Deafness *per se* is a symptom or sign that disease has entered the ear. By close observation and study of its variations, it is possible to locate with considerable exactness what structures are invaded and the extent of the same, although they be too deeply seated for diagnosis by sight or touch. Galton's whistle, the tuning-forks and watch do for diagnosis and prognosis of the ear what the ophthalmoscope does for the eye. With them we can judge whether the disease is in the sound conducting, sound receiving or labyrinthine part of the ear. I shall not go into details, as I wish to give consideration to the other phases of my subject.

Those who consider with indifference either of three signs, deafness, tinnitus and pain in the ears, though they be slight and easily borne, are apt to awaken too late to a sense of their deep gravity. To ease pain in this locality and not remove the cause of it is to mask the conditions and await serenely coming deafness. Pain once removed may never return, and if the patient is fortunate it may be middle life before deafness is manifest. It may seem to him far-fetched when he is told that the earache of childhood was nature's warning; such it was, however. A study of the history of deaf cases shows that deafness is almost always preceded by one or all of the three signs I have mentioned. Parents and others who are informed as to the indications and neglect to have children or themselves treated when the disease is easily curable are responsible

for the following disease and deafness. Physicians who do not speak to their patients of the serious sequence and the necessity of early treatment are blamable.

To drive lurking deafness from the incipient diseases of the ears, be it by wise counsel or otherwise, is clearly within the province of the general practitioner. He knows how deep-rooted the belief is among the laiety that "nothing should be done for running ears." That "wait" is the panacea offered for their every affliction, and the deaf and dumb are sent to the asylum direct without even the formality of an examination or advice from the family physician. These things are so, not because of lack of confidence in the physician, but because the people have not been brought to an understanding of the proper course.

Those among whom we live have a right to expect that we will keep them reasonably informed as to what advanced medical science approves and disapproves. And the general practitioner owes it to himself to question whether certain opinions and practices are to be found in his community, and challenge their right to be there, not wait for them to challenge him.

Let the people know that you are alive to the fact that certain old things have passed away, and on the subject of the ear there is at last a new doctrine and it says in substance, that all ear affections ought to have and shall have early treatment, or the patient, and not the doctor, assumes the responsibility of the disease and deafness which is to follow.

Every doctor in Georgia should see to it that no one goes deaf within the scope of his jurisdiction because of lack of knowledge, at the proper time, that it could be cured, and let no one be sent to the Deaf and Dumb School in the false belief that the medical profession offers no hope of a cure. With every prescription for earache add

a word about the cause and some strenuous advice relative to its removal.

There is a reasonable hope of preventing deafness if the general practitioner will only talk about it. His words travel like the wind and bear a power like unto Holy Writ. The public is quick to reflect his opinions and act upon his advice, and I believe there will be no dissenting voice when I say that those who make a specialty of the ear will hold themselves ready to give him practical aid, gratis if need be, to help him in any effort to lower the deaf census of Georgia or to scale down the attendance at the School of the Deaf as he has done that of the blind by the practice of Crede's method at the bedside of the new-born.

Restoring hearing after deafness is well established is a very much more arduous task than preventing deafness by removing the cause at the time of its inception. Then the conditions are localized, later they become general and complications arise.

Before this Association, for years and years, we have discussed old methods of treating the ears, and now and then shown slight variations from the routine. We have come practically to a standstill, with very little accomplished in favor of an ideal method giving practical results.

The deaf of the State are as numerous as ever, and the trustees of the School for the Deaf and Dumb are calling every year for larger appropriations and new buildings to care for the increasing number of those whom we have come to look upon with something of awe. I stand in my place to-day and declare with no fear of successful contradiction that there is not one in a hundred who is deaf because of a special providential visitation in the form of malformation, and many are amenable to cure by the same procedure which is most effective in the treatment of the deaf who can talk. The ideal method and instrument for treating the ear is one that will reach and treat it as a

whole, or may be directed to any special part, guided by the functional tests of which I have briefly spoken. It is to such an instrument and procedure that I wish to call your attention. It is original with myself and is known as Stapler's Rarefier, and I claim that it is the only instrument that will meet the above stated requirements scientifically and hygienically, and, in the use of which there is no pain, and directed with ordinary judgment, there will be no untoward effects upon the ear. And it is the only method by which some of the congenital and adventitious deaf and dumb have been given distinct hearing and speech. It is simple in construction and application and consists of rubber tubing having four branches to be fitted air-tight into nostrils and ears, and a bulb or pump is attached to the main tube, and by making suction the air is rarefied in the external auditory canals and middle ears, the latter being reached through the nose and eustachian canals while the patient is in the act of swallowing or crying. On each branch of the tubing is a shut-off by the use of which the instrument is brought to bear on different parts of the ear, to massage, to break up adhesions, to place the tympanic membranes, to move secretions and to bear volatilized medication to any or all parts. For the latter purpose it is best to use in the place of the bulb or pump a volatilizing apparatus, and I prefer that the tubes be attached to a compressed air tank for inflating; the pressure is then registered steady and continuous so long as the patient keeps the cheeks distended.

Seigel's specula may be attached to the aural branches where it is necessary to observe the membranes while the treatment is being applied. A safety valve is shown on the main stem of the tubing. To use the instrument the nostrils and ears are closed air-tight with the aural and nasal branches, those for the ears being held in place by an assistant; the nasal ones, being placed into the nostrils

about an inch, are held in place by the patient, the thumb and third finger of each hand catching the tube; the first and second fingers are placed on the alæ of the nose and pressure made sufficient to shut out the air except through the tubes. It is important that the patient does not close the lumen of the tubing, for in that case the instrument would reach only the outer side of the tympanic membrane. The main branch of the tubing is held in place on the pump by the operator. The patient should hold the chin tucked on the chest in order to throw the eustachian canals perpendicular with the floors of the middle ears, and should swallow to open the eustachian canals, while the operator is making suction with the pump or bulb. The effect of this procedure is to rarefy the air in the middle ears through the nose and eustachian canals, and at the same time to a like degree the air in the external auditory canals. Therefore the pressure within and without the tympanic membranes is equal and the membranes and ossicular chain remain passive in a rarefied chamber except as they may be moved by the expansion of the lymph in the labyrinth when the atmospheric pressure is removed from the footplate of the stapes. The amount of pressure exerted by the expansion of the lymph depends upon the extent to which the air in the midddle ear is rarefied, and operates to break adhesions within the ossicular chain and about the footplate of the stapes, and as the stapes are raised the secretory glands are stimulated and secrete more lymph, which holds the stapes and chain of bones in a new position by filling out the labyrinth. The relations of the parts having been changed there is no coaptation of raw surfaces, and consequently no return of former adhesions.

The hygienic effect is the removal of secretions or any foreign matter from the eustachian canals and middle ears into the pharynx, preventing the possibility of its finding

a way into the mastoid. The whole may be stated as massage of the labyrinth.

By considerable and prolonged rarefying, it is possible to make the ears tender by this procedure, but it is impossible to rupture any of the structures of the ear, because nature has provided that the soft palate will be drawn upward and permit the entrance of air when pressure is too great, so a safety valve on the instrument is not necessary, and my personal preference is for one without it.

Now should it be desirable to massage the tympanic membranes and ossicles, the shut-offs should be used on the nasal and aural branches alternately and suction made. If this procedure and the massage of the labyrinth are properly conducted every structure of the ear will have felt the influence.

By attaching the tubes to a compressed air tank a reverse method, dilatation, can be made to follow the former and from a volatilizer medicated sprays may be carried successfully to all the deeper parts. For hygienic reasons I always rarefy before inflating.

To retract the tympanic membranes rarefy through the nasal branches, the aural ones being shut out. To distend the tympanic membranes rarefy through the aural, the nasal branches being shut off, and the patient should swallow in order that air may enter the middle ear and cushion the membranes outward.

Following the douche to remove solutions from the ears all tubes should be open and in place when the pump is used and the patient in the act of swallowing, with chin on chest. This method is effective also in clearing obstructed frontal sinus and tear ducts. It is not an unreasonable supposition that it would be effective in preventing deafness following diphtheria and the eruptive fevers if the ears should be pumped clear of secretions every other day during and after such sickness. The germs which

find lodgment in the middle ears would be brought away with the secretions before colonies had formed. That, however, is yet to be tested.

Five years of practical use has established for these methods and instrument that the effects sought by the use of Politzer's bag, the air cabinet, catheter and massage instruments are better attained and in a manner more in accord with hygienic and advanced scientific thinking.

They are a practical support of the better diagnostic theories pertaining to the ear and show practical results for all kinds of deafness never attained before.

I have selected from my case records some cases to report. Before doing so I wish to say that I have had only two cases of deaf-mutism for treatment since I was last before this Association, and both of those cases were given distinct hearing and speech.

Case No. 1.—Mr. P., white, aged forty, came for treatment three months after a severe case of typhoid fever. He complained of a tightness about the head, roaring in the ears and deafness which was becoming rapidly worse, and he experienced much difficulty in hearing conversation when more than one was engaged. On examination I found his tympanic membranes hazy. Eustachian canals open to the passage of air, slight tenderness to pressure on the tragus.

The functional tests gave hearing for watch at six inches either ear. Bone conduction was considerably reduced. There was diminished hearing for both upper and lower register. His family history gave his father as having been profoundly deaf for many years.

Judging from the foregoing facts I diagnosed disease of both the conducting and receiving apparatus. Treatment was begun by instillations into the external auditory canals twice a day by the patient, adrenalin solution 1 to 1000,

the same being warmed and retained in the ears two minutes to relieve congestion.

The Rarefier was used once a day, beginning with gentle massage of all the structures followed by five minutes continuous inflation, the tubes being attached to a volatilizer. A spray consisting of camphor, menthol, turpentine and albolin, equal parts, was the while conveyed to all the cavities of the ears. Improvement began slowly, and after being under treatment three months the hearing had become almost normal, tinnitus ceased entirely in one ear and was intermittent in the other. The other symptoms have disappeared.

I have treated the patient at long intervals for a year, and in that time there has been deposited on the tympanic membranes at the umbo two circular calcareous deposits about the size of the head of an ordinary pin. Very probably there are deposits at other positions in the ears, and I believe that the hearing would have been entirely lost from anchyloses but for the massage.

Case No. 2.—Mrs. A., white, aged thirty-five years. Gave history of paid, discharge and deafness as a child; discharge and pain had ceased, roaring and a gradual loss of hearing had supervened. I made superficial examination, finding the membranes retracted, the tubes open to passage of air, feeling satisfied that it was a chronic middle ear condition. Treatment was begun by gentle massage followed by inflation, carrying volatilized medication through the canals and middle ears. She has been under treatment three months, the tinnitus has almost disappeared, and the hearing is double what it was when treatment was begun.

Case No. 3.—Mr. D., white, male, aged seventy-one years, had been quite deaf for many years and had lately become almost totally so from effects of la grippe. He had been treated by the use of sprays and Politzer's bag with no good results. An examination showed the canals open to the pass-

age of air; the membranes appeared large and lusterless. Without further test I decided it was a case of too much inflation and began treatment by retracting the tympanic membranes; hearing improved at once. I did not see him again. When he paid his bill, he wrote me that his hearing was as good as before his late illness and he was satisfied.

Case No. 4.—Miss F. W., aged twelve years. Gave a history of pain and slight deafness when quite young. The pain had ceased, and the deafness gradually increased, so that she was now obliged to have conversation repeated. Eustachian canals and tympanic membranes seemed normal. Functional test indicated interference in the conducting apparatus. The ears were treated by general massage followed by inflation. Only two treatments were necessary to establish perfect permanent hearing.

It is my opinion that this child would not have learned to talk had the inflammation occurred *in utero*. It is such adhesions as here existed which in my opinion are the cause of much deaf-mutism, and if taken before the adhesions become organized all can be made to hear.

DISCUSSION ON DR. STAPLER'S PAPER.

Dr. Cox: I would like to call attention again to the scientific aspect of this subject which refers to deaf-mutism, which is such a defect in hearing that the acquisition of language is prevented. Yesterday I read a paper on this subject. I think the doctor mentioned that he had eighteen cases brought to him, and that he had seen nine cases only once, and therefore could not report on them. Out of the nine left he reported five practically cured, and he had previously reported four, and this makes nine cures. I have only time to go into the merits of the question as to the results. I would like for him to state in his closing remarks whether he had 100 per cent. of cures? If he had even ten per cent. of cures this would

attract attention throughout the medical world. I believe that the doctor is honest in his opinions, but it may be that he is shedding more cures than he takes on, and it is so easy to be deceived in this manner. Yesterday I mentioned a man who received documentary certificate of cures and made a tremendous stir, and yet his results were absolutely nil. In my paper yesterday I read reports upon post-mortems upon nearly 150 deaf mutes in which the history had been taken, and then microscopic sections of the ear, including the bones, were made, and it was shown that practically all these cases were due to or connected with destructive changes in the internal ear, and that you cannot have complete destruction of hearing unless you have destruction of the nervous part, which is the essential part of hearing. This loss of essential substance is incurable. These are stern facts and you cannot get around them, and the conclusion cannot be escaped from. We have heard of cases of deaf-mutism being cured, but when sifted down it was found that they were not cured. Many of the children which the doctor reported as cured, one very recently reported, have subsequently become pupils in State schools for deaf mutes.

Dr. Roy: In reference to Dr. Stapler's instrument, I have a few words to say. We are sometimes led away by enthusiasm, and this makes us believe that certain things occur when they do not occur. The doctor spoke about massaging the labyrinth of the internal ear. This is impossible, as it is an inclosed bony cavity. If you get the drum in motion and move the ossicles, this sets the fluid in motion in the internal ear. By his instrument the air is rarefied on both sides of the drum, and if it is rarefied inside and outside you have no influence on the drum membrane. These facts are physical and practical facts which can be demonstrated under any law of physics.

I do not think that we should get back to impirical medicine of the dark ages. No cause can be gotten at unless we study it from facts. We should not treat the system with an apparatus which we cannot explain, but should treat in a scientific manner.

I have here a copy of the *Annals of the Deaf*, published at Washington, D. C., by Edward Allen Fay, in which he speaks of all phases of deaf-mutism, and I would like, with the permission of the Association, to have the Secretary read the article here bearing upon this discussion.

The Secretary read as follows:

American Annals of the Deaf, November, 1900; Edward Allen Fay; Washington, D. C.

Dr. Maury M. Stapler, of Macon, Ga., in a letter published in the *Goodson Gazette* of September 15, 1900, asserts that he has "successfully restored to almost perfect hearing and speech" three congenital deaf mutes, and expresses the belief that "a large percentage" of such cases can be cured. In the *Gazette* of October 1 he announces another cure, effected "in less than two hours." His statements are corroborated by two other physicians of that city. He invites investigation from physicians and instructors of the deaf.

We have seen other letters from Dr. Stapler in which he asserts other cures of deafness. In a letter written more than a year ago (June, 1899), he said:

"I wish to report the restoration of speech and hearing to Albert Bates of this city, a negro boy about twelve years of age. He came to me for treatment on the 12th of the present month. His mother stated that he could not hear at all and I found it to be true. Within three days he began to hear and now, after two months, he hears almost perfectly and speaks several words voluntarily."

Since receiving Dr. Stapler's treatment, Albert Bates has been placed as a pupil in the Georgia School for the Deaf. He says he received no benefit from the treatment.

On October 5, 1899, Dr. Stapler reported three more cases of "hearing restored" in the following letter: "I send you by mail a group picture of Misses Edith, May and Master Walter Duncan, of Columbia, S. C., three mutes who came to me on August 6, 1899, to have their hearing restored. They were born entirely deaf and were of course dumb. At present time they are able to hear and repeat words spoken into their ears without the use of trumpet, and to repeat the same in natural tone of voice. They are graduates of the South Carolina School for Mutes, and their ages are 21, 16 and 14."

In May, 1900, Mr. Duncan, the father of the children mentioned in the foregoing letter, wrote to the superintendent of the South Carolina institution: "I beg you to pardon me for keeping the children from school this session. We have been wasting their time with Dr. Stapler, of Macon, Ga., at a great deal of expense and no result. I will send them back to school next fall."

Dr. Stapler seems to have been sincere in his belief that he had succeeded in restoring hearing and speech in all these cases, but the facts above stated do not support his claim.

(Signed) E. A. F.

Dr. Stapler (in closing): I do not feel embarrassed by the situation. It is perfectly natural that we have mistakes in the beginning, and these cases were some of the first, and I was not then acquainted with the acuteness with which they would fool me. These had been to the deaf and dumb school and were able to deceive me, but take the cases I have shown to the meeting at Savannah, and I defy any one to prove that they are not as I have stated.

These investigations have been underhanded; they have not come to me for any explanation of the cases. I base my claims on cases which I know to be cured.

Dr. Cox: I rise to a point of personal privilege. The doctor speaks of underhanded methods in investigating these cases. I wish to say that one of the cases reported is at the Georgia School for the Deaf and Dumb and came directly under my care. I think it due me that the doctor should make a correction of his statement.

Dr. Stapler: In my remarks I did not intend to make any insinuation against any of the gentlemen, and I am sorry if they got that impression.

GASTROPTOSIS.

By J. N. LeCONTE, M.D., Atlanta.

Gastroptosis may be defined as a downward displacement of the stomach, which is often accompanied by descent of the transverse colon, right kidney, and more rarely of the left kidney, liver or spleen, and is generally attended with more or less disturbance of digestion. This general prolapse of the abdominal viscera was described by Glenard in 1885, under the name of enteroptosis, and much has since been written on the subject, though it has only received general attention within the past few years. The whole stomach is descended and generally lies transversely, or in a crescent shape at or below the navel.

Many and varied causes are ascribed for the presence of this condition, but it is probable that all of the factors are never active in any one case, and no case is developed solely from any one cause.

A congenital weakness and flabbiness of the tissues is often present, one of the signs of which is the loose or floating tenth rib of Stiller. Pleuritic, or pericardial effusion, emphysema, congenitally contracted thorax, or downward displacement of the liver tend to displace the stomach by pressure from above.

Gastroptosis frequently develops after exhausting diseases such as pneumonia, typhoid or influenza, the patient often dating the beginning of his trouble from such an attack. It is often a complication of the later stages of phthisis, the emaciation, general muscular relaxation and subnutrition contributing to its development.

The sudden removal of ascitic fluid or large abdominal tumors, or conditions accompanied by rapid loss of flesh, cause a disturbance of the intra-abdominal pressure, and of the relations of the organs to each other. One of the frequent causes in women is undoubtedly constriction and weight at the waist line, caused by corsets and the entire weight of the skirts being exerted upon and just above the stomach and transverse colon. Too rapid pregnancies and lack of care in the puerperium also induce flabby abdominal walls and relaxed ligamentous supports.

The use of excessive amounts of fluid with meals causing a dilution of the gastric juice, retarding digestion, putting an excessive burden on the gastric muscle, tend first to gastric atony and ultimately to descent.

Gastroptosis is a frequent condition in cases of digestive disturbance, Einhorn finding 4% among men and 36% among women. It is often found in women who have borne children, and generally becomes manifest in the strenuous period of life. In the practice of Dr. Clarence Johnson, with whom I am associated, I have tabulated 200 consecutive cases applying for treatment with digestive disorders, 115 men and 85 women, and of these were 38 cases of gastroptosis, nineteen men and nineteen women. Thirty of the thirty-eight had hyperacidity, nine had movable kidneys and thirty-five were between the ages of twenty-one and fifty.

Gastroptosis may exist without any symptoms whatever, the condition being only discovered on examination for some other purpose. This, however, is not the rule, some of the symptoms being caused by accompanying digestive disturbance.

The most frequent symptoms are tenderness and dragging pain in the epigastrium just below the ensiform, and a sense of weight and fullness in the umbilical and hypo-

gastric regions, both of which are often relieved in the earlier stages of the disease by assuming the reclining posture. Constipation alternating with occasional diarrhea is the rule, though any condition of the bowels may exist. Flatulence also is generally present.

Frequent micturition is often complained of, the result of pressure of the descended organs on the bladder and the reflex influence through the abdominal sympathetic nerves.

Strong pulsation of the abdominal aorta in the epigastrium is sometimes present, also extreme and unaccountable weakness in the morning on rising or after slight effort.

On inspection we find, with the patient standing, a round protuberance below the navel, the epigastrium being flattened. In very emaciated cases, however, or those whose abdominal walls are retracted, this protuberance is not present. Pulsation of the aorta and the firm transverse outline of the pancreas can generally be discerned in the epigastrium on account of the absence of the stomach.

One of the best tests of general enteroptosis is Glenard's "belt sign," which is accomplished by having the patient stand, then while standing behind, place the hands on the abdomen between the symphysis and the navel, press the abdomen upward and backward, the patient generally expressing relief. If the hands are suddenly removed, he complains of considerable pain. A sudden jolt or jar in walking also produces this pain.

A simple and reliable sound is the splashing sound, which may be produced by gently tapping the abdominal walls over the region of the stomach, and is permitted by an atonic condition of the stomach wall, some fluid and air being present in the stomach. If the splashing sound cannot be obtained, the patient may be directed to drink a glass of water, after which the sound may generally be

produced. The stomach may be located at or below the navel, or even as low as the symphysis. Proceeding from above downward on the left side, and from left to right, the boundaries of the stomach may often be obtained from the splashing sound.

A possible source of error in this method may be encountered in a case with very flabby abdominal walls and atonic stomach, the distended intestines being struck, the impulse is carried upward to the stomach, and the splashing sound plainly heard.

I have a case in mind also where the splashing sound was plainly obtained in the left inguinal region over the colon, and questioning elicited the statement that the patient habitually used enemas for his constipation, that he had used one an hour or so before the examination, and the greater part of the water had remained. A careful examination revealed the greater curvature about one inch below the navel.

In doubtful cases a gastrodiaphane or intragastric lamp, devised by Einhorn, is a valuable aid; the stomach being empty, the patient drinks a glass of water, the lamp is introduced and the outline of the stomach is shown as a red glow on the abdominal walls.

The method of inflation of the stomach by carbonic acid gas produced by the successive administration of bicarbonate of soda and tartaric acid is not devoid of danger, and should be used with great care, Behrend reporting three cases of sudden death following the use of this method in the Philadelphia hospital. Moreover, the amount of the gas produced is not under control, in one case distending too much, in another not enough. Much better is the plan of the inflation of the stomach with air by means of a rubber bulb and the stomach-tube, serving to accurately outline the limits of the stomach, which can be seen plainly

and may be verified by percussion. The stomach may be found totally descended, the greater curvature being at or below the navel, and the lesser curvature just above the navel, or the cardiac end of the stomach may be *in situ*, and the pyloric end descended and dilated or distorted in shape, the axis of the stomach being vertical or subvertical, and the entire organ being to the left of the median line.

The position of the stomach may be outlined by inspection, the patient reclining, all light being excluded except at the foot of the patient, the examiner stands at the shoulder of the patient, brings his eye to the level of the abdomen, and the patient being directed to breathe, faint transverse lines may be seen moving on the abdomen with respiration, indicating the greater and lesser curvatures. In marked prolapse of the stomach, however, the stomach is less affected by respiration.

Webster suggests that in women who have borne children relaxation and diastasis of the recti muscles may be tested by having the patient lie flat, placing the finger-tips of the right hand at linea alba, then grasp the patient's hand and ask her to raise her head and chest, thus determining the degree of relaxation. Pacanowski has determined by the examination of eighty people in health, that the upper border of the stomach was at the fifth intercostal space in the left parasternal line, the greater curvature being generally found in the same line 1¼ to 2½ inches above the navel; hence, when the lower boundary is found at or below the navel, it indicates either dilatation from atony, dilatation from pyloric obstruction, or gastroptosis. If the upper part of the epigastrium contains no part of the stomach, it is pathognomonic of gastroptosis. The position of the lesser curvature is of greatest importance in these cases, for without this knowledge it is impossible to differentiate enlargements and displacements of the organ.

Movable kidneys often accompany the descent of the stomach, Einhorn finding nephroptosis in 70% among women and 2½% among men of his cases of abdominal ptosis, the right kidney generally being movable, rarely the left. It is easily recognized by grasping the loin of the patient just below the twelfth rib, between the thumb and fingers, having the patient inspire; the kidney may be felt to slip downward between the thumb and fingers, and if the third or fourth degree of mobility can be arrested below the grasp.

When a movable kidney accompanies general ptosis, operations for anchoring are ineffectual to confine it in place, but fortunately by means of the proper measures for the correction of general ptosis the symptoms of nephroptosis are relieved. Extreme nervousness, sometimes developing into neurasthenia, often accompanies gastroptosis, so often that many consider it the direct result of gastroptosis; we can better explain it that both develop from the same causes, each forming a link in the vicious circle and each punishing and aggravating the other.

We may have as a complication any state of the motor and secretory functions of the stomach, over acidity being the rule. Every case showing digestive disturbance should be thoroughly investigated, a test meal given, and appropriate treatment instituted. A condition of atony is always to be expected, and genuine dilatation of the stomach is not infrequently seen. The horizontal portion of the duodenum being fixed, the descent of the pylorus causes more or less stenosis at this point and may interfere with the timely emptying of the stomach.

Much difference of opinion exists among authorities as to the ultimate anatomical return of the stomach to its normal position, and although we can not expect this in all cases many such do undoubtedly occur. All agree that the

symptoms can be relieved, nutrition improved, and the patient restored to usefulness by proper measures.

Whereas, phthisis, the intrinsic tendency of which is fatal, endows its victom with hope of recovery even to the last, sufferers from indigestion, though amenable to treatment, always look on the dark side and seem marked for melancholy.

Indication for treatment may be divided into (1) mechanical support for the prolapsed stomach and other viscera; (2) restoration of the lost tone and motor activity to the gastric and abdominal muscles; (3) increase nutrition; (4) treat the complications.

One of the best forms of mechanical support is an elastic abdominal bandage fitted carefully, so constructed that it exerts its pressure upward and backward on a point midway between the symphysis and navel. The bandage must be held down firmly against the symphysis with perineal straps, otherwise the bandage slips up and fails of its purpose. The use of zinc adhesive plaster strips twelve inches wide as recommended by Rose, applied to the abdomen so as to serve as a support, commends itself especially in dispensary cases, where the item of expense is an important one. The plaster can generally be worn between five and six weeks before it is changed. The idea that when a bandage is once worn it becomes a lifelong necessity is fallacious, the patient generally being able to lay it aside in a few months on the return of strength and tone to the ligaments and abdominal walls. The bandage is especially useful in so-called "Landau" cases, where the relaxed and over-stretched abdominal muscles allow the abdominal contents to overflow the brim of the pelvis.

Injurious constriction at the waist should be forbidden and the weight of all skirts transferred to the shoulders by means of a corset-waist. Rest in bed for several weeks,

as advised by some, is valuable in a severe case bordering on neurasthenia, but ordinarily more is gained by outdoor air and exercise and the avoidance of mental depression caused by enforced confinement to bed.

The patient should be directed to recline with all clothing loosened for at least half an hour after meals.

I wish especially to extol the value of intragastric electricity for the restoration of tone to the gastric muscle and abdominal walls, at the same time serving as a general tonic. I have seen cases in which the stomach was resting down on the symphysis brought up to its normal position by this means and the aid of the bandage; and after a lapse of two years, long after the bandage had been discarded, examination revealed the stomach still *in situ*.

It is impossible to formulate any fixed line of diet, the character of which must depend largely on the condition of the motor and the secretory functions. As a rule, fried food, condiments and concentrated sweets should be forbidden. In cases showing marked emaciation it is well to direct a light lunch midway between the regular meals. The total quantity of fluids at a meal should be restricted to a glass or a glass and a half, thereby relieving the stomach of some of its burden, and aiding it to empty itself sooner. In addition to the drugs necessitated by the complications, nux vomica, iron and arsenic are generally indicated.

The patient's habits and mode of life must be carefully supervised, regular hours of sleep, gentle exercise, an abundance of open air and the avoidance of mental or physical overstrain should be insisted upon. General massage is of value here as in all conditions of poor circulation, malnutrition and nervousness, but localized massage of the abdomen is of doubtful value, and has even been known to produce peritonitis.

Water applied to the abdomen in the form of Scottish douche is often of value. This provides warm water at 95°, alternating with cold water at 55° every few seconds (the application extending over a period of three or four minutes). Gastric lavage is not indicated unless there is catarrh or marked retention of food or fermentation. Aaron has found that when pregnancy supervenes in a case of marked enteroptosis, the troublesome symptoms disappear as pregnancy advances, and if given especial attention after delivery, then a tight-fitting bandage applied, the condition is relieved, several of his cases having resulted in complete recovery. The enlarging uterus lifts up the prolapsed organs, allowing the overstretched mesenteries to regain their strength, and after delivery the receding abdominal walls prevent the recurrence of enteroptosis.

Various operations have been suggested for the relief and cure of gastroptosis and enteroptosis: (1) shortening of the gastrohepatic and gastrophrenic ligaments (Beyea) in cases where the abdominal walls are not relaxed; (2) splitting the sheath of the recti and suturing them together in the same sheath has been recommended by Webster in those extreme cases of diastasis and separation of the recti following rapid pregnancy; (3) suspending the stomach in a hammock, made by suturing the greater omentum to the anterior abdominal wall (Coffey).

It is rarely necessary to resort to operation, however, if proper methods of treatment are faithfully persevered in.

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THE ACTION ON MUCOUS MEMBRANES OF SILVER SALTS, WITH ESPECIAL REFERENCE TO SOME OF THEIR NEW ORGANIC FORMS.

By ARTHUR G. HOBBS, M.D., Atlanta.

To discuss the therapeutic action of the silver salts from any point of view the nitrate is the first that would naturally present itself to our minds, since it has been one of the staples in materia medica from time immemorial. Its potency is so great that ofttimes its misuse has resulted in much damage. In ignorant hands this inorganic form of silver is a dangerous remedy. Like all other things of potentiality, its misuse may result in as much disaster as its proper use may do good. Like fire, nitrate of silver should be applied with discretion; good in its place and in proper strengths, but equally as bad when used without thought.

Should I not say that it is, from a clinical standpoint, more like electricity, potential either for good or evil, according to the intelligence of him who applies it? Yet many of its disadvantages in some cases prove to be its advantages in others, and the reverse is equally true. The nitrate of silver can be used much stronger, with not only better results, but with much less of its objectionable features on squamous mucous membranes, such for example as we find on the deglutition part of the throat, than upon the columnar and, more especially, upon the columnar-ciliated mucous membranes. Its irritative and caustic properties are especially objec-

tionable to both the columnar and to the columnar-ciliated form of epithelia.

We may, in a general way, remember that mucous membranes which are subjected to wear and tear are of the squamous variety, the columnar next and then the columnar-ciliated. The last especially resists less the contact or touch of anything foreign, and especially of anything that is irritating or caustic.

A much stronger solution of the inorganic salt can be applied, and advantageously so, to the lower pharynx and tonsils than to the upper pharynx and nasal mucous membranes, and still a lesser strength must be applied to the eustachian tube with its columnar-ciliated epithelium.

This rule applies to all other mucous membrane tracts and cavities. Hence one of the chief objections to our old standby, the nitrate of silver, is its irritating after-effects, and this applies whether we use it on the conjunctiva, in the urethra or on the nasal mucous membrane, with the exception only that mucous membranes of the squamous variety are always and under all circumstances benefited by it, when the strength is properly considered. But when it is used on either a columnar or a columnar-ciliated epithelium, in any considerable strength, it coagulates and destroys the outer layers and does not penetrate into the mucous membrane layer proper. It is upon this idea alone that all the new organic preparations of silver are or can be based.

Yet one word more about the inorganic form. In its greater strengths it does just what we want it to do under certain conditions. It cauterizes and destroys already broken-down tissues and stimulates a new and healthy growth beneath, but just here comes the questions: How strong shall it be? When and where shall

we use it? What is the character of the membrane upon which we should use it?

Nitrate of silver is not yet relegated as a past number, and perhaps it never will be, however many substitutes it may have, since there are some forms of mucous membrane necroses in which it is an ideal applicant, not to mention the many other conditions in which it is most appropriate in its weaker forms. It is somewhat analogous in its effects to quinine in its action in its different strengths. As quinine is tonic, antipyretic, or antiphlogistic according to its dose, so is nitrate of silver stimulant, sedative and caustic, according to where it is applied and in what strengths. If applied too strong it may produce a stricture in the urethra, a stenosis in the nasal cavity, or a symblepharon of the conjunctiva.

And now we are brought face to face with some of the claims of the new organic forms of the salt, after having placed our reliance for so many years upon this one that is inorganic. Some of the recent proteid silver salts have, in a measure and under certain conditions, already taken the place of our old standby, and justly so. They are better than it in some cases, because they are eliminated of its irritating and caustic properties. Protargol, Argyrol and Albargin are the commercial names given to some of the most prominent of these organic salts of silver. The first, Protargol, I believe has been the most useful as a substitute for the nitrate in genito-urinary practice, but it can be so substituted, and with much advantage to the mucous membranes of all other tracts and cavities, especially where the lining is either columnar or columnar-ciliated, and when the subjective irritation is a consideration. I shall not go into its genito-urinary adaptations, since I have had no experience with its use in that line, but suffice it to say that, if we can judge by

its voluminous literature, it would seem to have almost superseded the nitrate, just as Argyrol is superseding the older salt in the ophthalmias. Even the old and classical Crede method is rapidly giving way to the use of Argyrol in the largest lying-in hospitals, not only in this country but in Europe, mainly because of its non-irritant and non-caustic properties, but also because it penetrates deeper into the mucosa and is more decidedly bacteriological in its effects. Albargin, which contains a much less percentage of silver than Argyrol, is a gelatose silver, and hence seems to give up its base more gradually, more slowly, and to have deeper penetrating properties than some of the others, and, for these reasons, in some cases may produce a more desirable effect. While there are still other proteid organic compounds of silver, all of which are based upon the idea of substituting, or improving upon the old inorganic form, I have not had enough experience with them to do them justice just now.

The object of this paper has simply been to call attention to the fact that we must recognize and test this new idea that so many chemists are now working upon, viz. that some ideal silver salt can be produced upon an organic or proteid basis, that will eliminate the objectionable features of the nitrate. The literature on the use of these new organic silver salts has been voluminous during the past few years, and I must refer you to it, in this short paper, for the exact indications and strengths of each. But I will herewith attach a full bibliography that you may have if you wish to pursue the subject as to the adaptation of each. As I have already stated, it has been my object only to impress the fact that we must recognize this comparatively new idea of silver in its organic compounds, and that we must finally decide which of them we shall use?

When we shall use it? Upon what mucous membrane and in what strength?

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A NEPHRECTOMY, WITH REMARKS.

By J. G. EARNEST, M.D., Atlanta.

The following case, referred to me by Dr. C. M. Paine, was first seen September 9, 1902. The patient, white, male, aged thirty, stated that he had been in perfect health up to three weeks previous to that time, when he began to have pain in the neighborhood of the left kidney and noticed a flocculent white sediment in his urine. He also began about that time to have rigors followed by fever. I found him at 10 o'clock in the morning with a temperature of 102, complaining of intense pain about the left kidney extending down into the front of the abdomen on that side. This pain was so great as to require the constant use of opiates. The physical examination showed a mass bulging out from the lower border of the ribs, reaching back to the kidney and extending downward to a point opposite the umbilicus. The mass was very sensitive. The quantity of fluid passed from the bladder was about normal and contained a large per cent. of white flocculent sediment which was found to be pus. A careful microscopic examination was made, especially looking for tubercle bacilli, but nothing of importance but pus was found. I suspected that there was probably a large stone in the kidney. It was finally settled that nothing short of surgical interference would give any relief. The patient was carried to the Halcyon Retreat September 22, and prepared for operation, which was done on the 23d of September. The usual lumbar incision was made, exposing the kidney as freely as the space between the lower rib and top of the ilium would admit. The post-

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renal fat had been entirely absorbed. There was no pus outside the kidney. After pulling back the surrounding tissues it was found the kidney was entirely too large to be brought out of the incision. The organ was freely incised, when a quantity of pus, estimated by the gentlemen present to be not less than two pints, was discharged. There was no stone or evidence of tubercle or fungous growth found. The kidney was simply converted into a sack with walls about one-third of an inch thick and perfectly smooth inside. The adhesions to the surrounding structures were so dense as to make a very difficult dissection. The vessels and ureter were tied off en masse with heavy silk and the wound moderately packed with five per cent. iodoform gauze. The external wound was partly closed—sufficient space being left for free drainage. This case has been reported in order that I might call attention to one feature of the case that seems to me extraordinary, that is the enormous quantity of pus passed for ten or twelve days before the operation. I noticed for several days what seemed a very unusual amount of pus in the urine, and so about eight or nine days previous to operating I began having all the urine he passed during the twenty-four hours voided into bottles of known capacity and set aside so that I might estimate the quantity of pus. After standing twenty-four hours the pus was found to have settled down into a solid mass at the bottom. I am confident that there was not less than eight ounces of pus passed any day after I began a systematic estimate of the quantity. That was about eight or nine days. Whether this represented the pus-forming capacity of the sac, or was partly the overflow of pus previously formed, I know not, but feel absolutely certain as to the quantity passed.

The patient made an uneventful recovery, and four months after the operation was in perfect health, having gained about forty pounds.

THE VAGINAL ROUTE IN GYNECOLOGY.

By GEORGE R. WHITE, M.D., Savannah.

The vaginal route for pelvic and abdominal operations is no new procedure. Over thirty years ago Thomas was a strenuous advocate of opening the abdomen by this method, and it was practiced by a number of operators. A few years later the brilliant results of abdominal section began to be attained, new methods of managing pus in the abdominal cavity were devised, and, at the same time, the fear of the harmless bacteria inhabiting the vagina was so great that a woman was not allowed the privilege of a normal delivery without an elaborate system of antiseptic douching; and many deemed it unwise to attempt this passage into the abdominal cavity with the expectation of avoiding septic peritonitis; the vaginal route consequently was abandoned for a generation.

Mackenrodt (1), in his article on vaginal fixation of the retroflexed uterus, did much to call attention to the vaginal route in abdominal operations; but to Dührssen (2), of Berlin, is due the most credit for perfecting the technique and popularizing the operation. In this country Veinberg, of New York, has been an able and persistent advocate of this method since 1894, and more recently Cleveland (3), Polk (4), Riddle Goffe (5), and scores of others have written in its favor. Nevertheless, the operation finds scant treatment in our text-books and is practiced extensively by comparatively few. The reason, perhaps, is that it requires considerable skill and experience to work successfully along these lines; and the most celebrated gyne-

cologists, men renowned in abdominal surgery, are often embarrassed at their inability to rightly appreciate the value of the finger as a diagnostic agent in vaginal examinations. As Palmer Dudley (6) states, there are master workers in the abdomen and master workers in the vagina, and there is little wonder that sometimes a disagreement exists between them as to which is the better method; but with the influx of younger men greater preference is, apparently, manifested for the latter.

If the vaginal route can be used its advantages are numerous and important. In the first place the danger is much less. Septic peritonitis is rare from the fact that the peritoneum is not denuded of its epithelium nor otherwise injured by handling; and, even if infected, the uninjured peritoneum can care for considerable septic material, and, as pointed out by Fowler, the peritoneum becomes more susceptible to septic infection as we go from below up. This being true, the pelvic peritoneum is therefore the least liable to convey infection. There is no handling of the intestines, with its accompanying shock and paralytic obstruction. Drainage is easily secured and harmless. No danger from hernia results. Recovery is rapid, ten days or two weeks often being sufficient to have the patient up and about. Convalescence is much freer from pain, and the patient can lie on the side and move about in bed immediately after the operation. From the patient's point of view, often the most important advantage is the absence of a scar upon the abdomen.

The vaginal route is used in selecting cases for practically the whole field of pelvic surgery, but every case must be decided upon its merit, and the abdomen opened from above when indicated; or, the vaginal operation abandoned in favor of the abdominal if the occasion requires, and no operation through the vagina should be

begun without first preparing the patient so that the abdomen may be opened at a moment's notice.

The peritoneal cavity may be opened by one of three incisions: between the uterus and the bladder; between the uterus and the rectum or through the broad ligament at the side of the uterus. This latter method is highly recommended by Dührssen (7), as it affords ample room for the removal of large tumors, and is especially useful in removing intraligamentous growths. If it be decided to operate through the anterior fornix of the vagina the perineum is retracted by Simon's speculum or some of its modifications, the cervix drawn down and back with tenaculum forceps, and the mucous membrane at the cervico-vaginal junction incised. The dense connective tissue between the cervix and bladder can then be severed by the scissors until the peritoneum is reached and opened. There is some danger of cutting the bladder, but this can be prevented by relying upon the sense of touch instead of that of sight, and by inserting the finger into the transverse incision to push the bladder out of the way, and cutting with blunt curved scissors between the finger and uterus until the peritoneal cavity is pierced. Should the transverse incision not give enough room the vagina may be incised longitudinally from the transverse incision to near the meatus and the flaps drawn aside. The posterior pouch is opened in a similar manner, by cutting with blunt scissors between the finger and uterus until the peritoneum is perforated. There is little danger of perforating the rectum and hemorrhage by either of these methods is slight.

In mentioning in detail some of the uses of the vaginal route the operation for retroversion is naturally of prime importance. Mackenrodt (16), in the early nineties, was the first extensive investigator along this line. His method of suturing the lower segment of the uterus to the anterior

vaginal wall, either with or without opening the peritoneal cavity, was faulty, and many cases of severe dystocia have arisen therefrom. Dührssen's (8) modification of this operation, however, seems to overcome objection. He fixes the fundus of the uterus to the peritoneum, covering the bladder by one transverse silkworm suture passed through the wall of the vagina and the vesical peritoneum some distance above the incision, and transversely through the uterus at the junction of the cervix and body, bringing it out in a reverse direction. If the woman be capable of bearing children the peritoneum is sutured before the fixation suture is tied, otherwise the fundus of the uterus is sutured to the top of the vagina. Dührssen has done the operation 700 times, mostly in complicated cases. Of his cases 37 have borne children without difficulty, and the first instance of dystocia resulting from this measure, when properly done, is yet to be reported. Rühl (8) reports 26 cases of labor following the operation with equally good results.

Personal experience with the operation has demonstrated that it is easy to perform and eminently satisfactory in its results.

Wertheim was the first to effect vaginal shortening of the round ligaments, and of it he speaks highly. In 87 cases reported 79 per cent. were without recurrence, and those in which this happened were complicated. No evidences of dystocia have occurred. Veinberg now practices this operation and reports 57 cases. In addition to shortening the round ligaments by folding them on themselves, he inspects the adnexa and does what other surgery is required. All of his cases, he claims, recovered. In four complicated conditions recurrence took place. Eight pregnancies have occurred in six women, all without difficulty.

The results of these operations, however, are not as

satisfactory in other clinics. Anderich (15) reports the results from Pfannensteils' clinic, in Breslau in which 48 per cent. of recurrences have occurred from shortening of the round ligament and over 10 per cent. from vaginal fixation.

But as Rühl has stated, it is not an operation for the average physician to undertake, and can be successfully accomplished only by the skilled specialist.

Prolapse is treated very similarly to retroversion. The anterior fornix is opened and the vagina split down the anterior median line. The bladder is removed from its bed and pushed up above the pubis, while the fundus of the uterus is brought down and sutured into the anterior vaginal wall directly below this organ. At the same time such other plastic work as may be necessary is done. The results of the operation are excellent. In 70 cases of Duhrssen (12) only two recurred. Freund also reports 46 cases free from recurrence or other unpleasant symptoms. Moreover, this method of disposing of the bladder is perhaps the most satisfactory means of curing a cystocele. There is no disturbance of function, provided the bladder is not raised too high out of the pelvis and the urethra overstretched. Recurrence is rare.

The vaginal route finds perhaps its greatest, its most extensive field of usefulness in the treatment of septic processes in and about the pelvic organs. Drainage is indicated in abscesses in the cellular tissue, cases of acute pelvic sepsis with marked constitutional symptoms, and as a palliative measure in those conditions in which a radical operation cannot be undertaken at once on account of the extent of the disease or the exhaustion of the patient. The abscess cavities are opened through the posterior fornix of the vagina without perforating the peritoneal cavity. All the pockets are broken into by the finger, and the cavity is either packed with gauze or a

tube inserted. The operation is simple, the mortality practically nil. Herman (17) relates 96 cases without a single death, but not all were cured. Taube (18) announces 44 cures in 79 cases. Drainage is often a preliminary to more radical measures.

Oberlander (19) has compared 24 cases incised and drained with a like number treated expectantly. The latter class showed a mortality of 4, while in the former 2 died from causes not connected with the operation.

Total extirpation of the diseased tubes and ovaries is indicated in cases of long standing, where drainage has failed to effect a cure, and the abscess fills up after being once completely emptied. If both adnexa are diseased and the radical procedure becomes essential, some surgeons recommend removing the uterus at the same time.

Regarding the relative mortality following the extirpation of pus tubes by the abdominal and vaginal route, Mandl and Burger (21), of Shauta's clinic in Vienna, have analyses of 273 cases which show a death-rate of 13.17 per cent. following celiotomy, and of 2 per cent. following the operation through the vagina.

Noble (22) states that by abandoning the abdominal route and working through the vagina the mortality in pelvic sepsis has been reduced from 27 per cent. to less than 2 per cent. Pryor (20), Reynolds (23), and Rechelot (25) report personal statistics equally as satisfactory.

My own experience during the past year and a half has been limited to 14 cases, but it has been in line with the results above. There was no mortality, and recovery has been always prompt. One case recurred after drainage of a pus tube, and the radical operation had to be performed. In one the vaginal route had to be abandoned on account of a pus tube located and attached high up in the pelvis and beyond reach. The abdomen was opened, the tube removed, and the incision through the vagina used for

drainage, while the abdominal wound was tightly closed. Recovery was uneventful.

Fibroids of the uterus may be dealt with by the vaginal route, either by extirpation of the uterus or enucleation. The size of the tumor that can be removed by this method is determined in a measure by the skill of the operator. A. Martin states that size alone does not contraindicate the vaginal operation, for by *morcellement* and splitting the uterus in the median line tumors of enormous size may be successfully extirpated.

Thorn has done 122 vaginal operations for fibroids with but two deaths. Of this number 55 were enucleations, and 70 were extirpated. Increased experience has taught him that vaginal hysterectomy is usually the better operation. His earlier statistics show one hysterectomy to four and a half enucleations, while later statistics show one enucleation to 2½ hysterectomies.

A. Martin voices a similar sentiment. His notes present 26 abdominal hysterectomies for fibroids with 5 deaths, and 87 vaginal operations with but two fatalities.

Dermoids and other tumors are removed with more or less ease, usually through an anterior incision, the posterior fornix being opened for drainage.

Cysts are especially suitable for the vaginal operation (24) as they may be punctured and the collapsed mass drawn out, ligated and excised. Extirpation of the normal ovaries or non-cancerous uterus, should that operation be required, is done with comparative ease.

Extra-uterine pregnancy may be treated satisfactorily, especially if seen before the tube ruptures; but vaginal section has been abandoned by most operators (34) once this has happened and the abdominal cavity is full of blood.

For an exploratory incision the vaginal course is recommended by Preobrajenski (34), Goffe (29), Pryor (20), and Ott, (34) who has devised an electric lamp attached to retractors to enable one to light up the peri-

toneal cavity. By these procedures almost the whole field of pelvic surgery may be covered by the vaginal route. Fritch has laid down the principle which the writer wishes to indorse. "*Was irgend vaginal operirt werden kann auch vaginal operirt werden soll.*" Whatever you can do through the vagina do that way.

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THE RELATION OF THE NERVOUS SYSTEM TO UNILATERAL SWEATING.

By E. BATES BLOCK, M.D., Atlanta.

Unilateral sweating occurs much more frequently than is observed, chiefly because it does not give rise as a rule to any inconvenience, and partly because physicians do not look for it. Since becoming interested in the case which I wish to report to-day I have seen about a dozen cases, in the majority of which the symptom had escaped the notice of the patient. Occasionally, however, it is a source of great inconvenience and embarrassment. Erasmus Wilson recounts a case of a young actor who appeared on the stage in the disguise of an old man, and was much puzzled by the bursts of laughter which greeted him, but on retiring to the dressing-room he found that copious perspiration had washed the paint from one side of his face, producing a very ludicrous appearance.

While a few cases of general sweating have led to death from exhaustion, I am not aware that unilateral sweating has ever been followed by such serious consequences, although it is frequently accompanied by great weakness, and it formed one of the chief complaints in the following case.

A. H., a Russian tailor, aged forty-seven, was admitted to Dr. Thomas's clinic in the Johns Hopkins Hospital Dispensary on the 23d of April, 1901 (C. 2928), complaining of sweating on one side of the head and body.

Family History.—His father, mother, three brothers and

one sister are living and well. One brother and sister died in childhood of unknown cause. His family is healthy and have had no nervous diseases.

Past History.—Patient had malaria when thirteen years old, otherwise always well. Remembers no other diseases. Denies Venereal diseases. Married at seventeen, has five sons and two daughters living and well. One daughter died at age of fourteen after three days' illness, in which the knees were affected. He drinks very little; smokes cigarettes moderately.

Present Illness.—Twelve years ago the patient had pain in the epigastric region, just below the ensiform cartilage which was relieved by eating. No history of any other gastric symptoms can be obtained, but at the time he first noticed copious and continuous sweating of the right side of the face, head and shoulder and upper part of the chest. This occurs as well during sleep as when awake, both in summer and winter, and even when a cold wind is blowing. The sweating increases a little in summer and when he works. When working hard the left side sweats also, but never as much as the right side. The sweating is worse on damp days, and he says it weakens him. He thinks he sweats more in America than he did in Russia (has been here three months). He says no more wax comes from one ear than from the other, and has never noticed any unequal secretion of saliva. He does not think himself nervous or excitable. Sleeps well at night. Seldom has headache. Eyes good, but says the right eye is a little weak from sweat running into it. Ears, nose and taste are normal. Appetite and digestion good. Has been constipated for last three months (since he came to America) and was occasionally so troubled in the old country. Has no pain anywhere. Muscular strength good. Thinks he passes as much urine as other people and of the same color.

Physical Examination.—The pupils are equal, react to light, and during accommodation and consensually. The right labio-nasal groove is much deeper and more distinct than the left. The hair of the right side of the head extending from the mid-line to the ear, from the frontal to the nuchal region, is wet, while on the left side of the head the hair is dry. While under observation the patient broke out with large beads of perspiration on the right side of the face, most marked over the right temporal region and forehead. The beard is of equal length on the two sides, but from the eyelids to the margin of the hair and beard there is a fine down on the right side, which is markedly more conspicuous than on the left side. The right side of the shirt collar, coat and vest are damper than the left, and the right lappel of the vest covering the front of the upper portion of the chest is damp. Drops of sweat run from the right axilla, while the left axilla is only damp, The knee kicks are normal. The sweat is acid and with litmus paper gives no distinct difference on the two sides. At the next visit the patient said that eating had no effect on the sweating. Exercise causes an increase, but the attacks come on just as often when not working. When the patient entered the room he was sweating slightly on the right side of the face. This rapidly increased until drops of sweat ran down the face. The right ear did not sweat. The right side of the head, neck and upper part of the chest and the axilla sweated. The hair as far as the mid-line is wet through and feels distinctly warmer than the left side of the hair. The left side of the face looks a little paler than the right side. The sweat turns blue litmus red. The mouth is drawn a little upward at the right corner,and the right corner extends further laterally than the left. The patient can move both sides of the face equally. The tongue is protruded in the mid-line. Marks of the teeth

are conspicuous along the borders, and the left side seems a little thicker than the right. Sensation to touch, pain, heat and cold seem normal and equal on the two sides. About half an hour after cessation of sweating the temperature on the two sides feels equal. No distinct difference can be made out in taste of the two sides of the tongue. Between sweating attacks there is little difference in the color of the two sides of the face, but when sweating begins the right side is seen to become redder. Temperature with the skin thermometer between attacks is 79 degrees F. on both sides. The patient was given some cake to eat and it was followed immediately by right-sided sweating, but it is doubtful if this was the cause, as the patient seemed nervous and embarrassed over being offered cake unexpectedly. The attack was much milder than usual and lasted only eight minutes. Vinegar, also, while embarrassing the patient and causing very slight increase in perspiration over the eyebrow and under the eye, does not cause a marked attack. The patient seems certain that sweating extends from the axilla around behind and in front to the level of the third rib, and only as far as the mid-line. Eating an orange does not cause sweating any more than the suggestion of doing so; so that the slight effect produced seems psychical. After washing the forehead with neutral alcohol the reaction of both sides was equally slightly acid. Patient says the headaches occur only on hot days in summer, and are confined to the right temporal and frontal regions. Pressure over the sympathetics, the whole of the neck, and the parotids shows no difference between the two sides. The pillow and shoulder of the night-dress are wet through every night by the excessive perspiration. During one of his visits the shirt was found to be wet half-way down the right arm. No difference in the sweating could be made out in the two

forearms or hands, although the patient was quite certain that during the attack the entire right upper extremity, including the hand, sweated more than the left. Later it was noted that on careful inspection the right forearm and hand showed more sweat than the left. The patient says during the attacks the right foot sweats more than the left, but this observation could not be confirmed objectively. The sweating was always limited sharply by the mid-line while the left side of the face remained dry as did also the right ear.

The sweat was collected several times during the attacks in test tubes and gave a heavy white precipitate with silver nitrate, which was insoluble in nitric acid. The reaction of the sweat was frequently tested after cleaning the face with neutral alcohol and was always found to be slightly acid. On the 15th of May the patient said that formerly the sweat was of a yellow color and stained his clothes yellow, but since treatment has become much paler and stains the shirt very little.

There is a small patch of alopecia areata the size of a five-cent piece on the middle of the top of the head. Just below the hair line on the nape of the neck and just to the left of the mid-line is a round flattened quarter-sized prominence seemingly on the muscle; over it the skin is freely movable. It feels of about the consistence of a lipoma. It is not sharply defined. The left temporal artery is tortuous and more conspicuous than the right. The pulse in the right temple near the ear seems fuller than on the left side. The sensation of the two sides of the face seems equal for touch of the head and point of a pin, and for hot and cold, except on the right half of the forehead where they do not seem easily distinguished and over the part of the head covered by hair (both sides) heat and cold are not distinguished. Examination of the chest,

heart and abdomen was negative. The pulse ranged between 64 and 72. During one of his visits he complained of a slight sensation of pain and itching under the right eye and over the right temple. At a later visit he said he had had pain for the last two days only on the right side of the forehead and anterior half of the right parietal region.

According to the patient, the causes of the sweating are wind blowing on the face, muscular work, eating and drinking warm fluids. A breeze from a bellows was blown on the face. A few minutes after cessation the slightest perceptible sweating appeared on the right side of the face. This process was repeated later, but no sweating occurred. On chewing cork the slightest perceptible sweating was observed; on repetition no sweating. The patient was given a glass of hot water to drink and in a few moments broke out in a profuse perspiration, the sweat pouring in streams down the right side of his face. This experiment was repeated several times at different visits, and always with the same results. The right side of the face became warmer than the left during the sweating.

The electric excitability of the muscles of the two sides of the face do not show any appreciable difference. Stimulation of the seventh nerve by the galvanic current causes slight sweating, but this might have been due to sensitiveness of the right side of the face to the electric current. The patient complains more of pain on the right side from electricity than on the left.

The temperature taken simultaneously in both axillæ after a sweating attack was 0.2 degree F., lower in the right axilla than in the left. During sweating attacks, however, brought on either by drinking hot water, or as a result of pilocarpine injection, there was a distinct rise

in the temperature of the right axilla, which exceeded that of the left by 0.1 degree F. to 0.5 degree F.

In thirteen observations of the pupils, both during the sweating attacks and between them, the right pupil was slightly smaller than the left ten times, while on three occasions they appeared equal. The difference was never very marked. The right pupil continued smaller than the left during sweating produced either by drinking hot water or after an injection of pilocarpine. They both react to light, during accommodation, and consensually, but the left seems to react better than the right. The ciliospinal reflex is present on both sides. The left pupil dilated more than the right on one ocasion when cocain was applied, but on another occasion the right dilated more than the left, so that no conclusion can be drawn from this experiment. Dr. Mills kindly made a careful examination of the eyes and reported the fundus normal. There was no clouding of the vitreous.

Myopia R. 2.75 D.
L. 1.25 D.

On two occasions the right palpebral fissure was noted as being larger than the left, and there seemed to be a slight enophthalmus of the right eye. According to the patient, the tears flow more from the right eye than the left. There was no change in the intraocular tension.

Pilocarpine given subcutaneously in doses of from 1-12 to 1-6 of a grain caused sweating in from ten to fifteen minutes. This, as a rule, began on the right side several minutes before the left side showed any evidence of sweating and was always much more profuse on the right side. Occasionally it began simultaneously on both sides, but was always much more marked on the right. Even immediately after a sweating attack it could be brought on again by the administration of pilocarpine. The sweat-

ing was most marked over the whole of the right side of the face, head, thorax, and abdomen, and the right arm and forearm. After a few injections had been given the patient seemed to become much less susceptible to its influence, and on one occasion the right side of the face became warmer than the left twenty-five minutes after the injection of 1-10 of a grain, but after one hour's observation there was no sweating. Sweating from pilocarpine never lasted over forty minutes.

The treatment consisted of the administration of strychnin, which caused a marked temporary improvement. Under its use the sweating ceased being continuous and the attacks lasted only about eight minutes, whereas the acute attacks were formerly of much longer duration. He was later given a pill of atropin, grain 1-150, which controlled the sweating very satisfactorily while he was taking it, but had no permanent effect. It was not as satisfactory as the strychnin, and sweating was very profuse and continuous after the atropin was stopped. Cascara was given to control his constipation, with slight improvement in sweating. He was later given a pill of aloin, strychnin, belladonna, and ipecac, with some benefit, but we finally returned to strychnin as being the most satisfactory drug. He seemed to derive some benefit from the pilocarpine injections, which had been highly recommended in this disease, but he was unable to take them at frequent intervals.

There are perhaps no subjects in medicine more difficult than the diseases attributed to the sympathetic nerves, owing largely to our imperfect knowledge of their physiology. It has proven a rich field for research to the few who have undertaken their study, but owing to the difficulty of the subject there have been comparatively few

who have undertaken a special study of the sympathetic nervous system.

Bernard and Brown-Sequard have shown that section of the cervical sympathetics is followed by intense congestion of the vessels beyond the point of section, contraction of the pupil and a copious secretion or flux from the several glands of the corresponding part, and similar results have been obtained from section of the sympathetic branch going to the submaxillary gland (Anstie). Dupuytren found that the removal on one side of the superior cervical ganglia of the sympathetic in horses produced an injection of the conjunctiva, an increased temperature in the ear and an abundant perspiration of the head and neck on the same side; and that increased perspiration of the same side of the head also followed upon section of cervical sympathetic nerve on one side. Claude Bernard had the same results but found in addition that galvanization of the divided nerve arrested the secretion of sweat (Mickle). Recent investigations (1899) of Dastre and Morat have taught that the sympatheticus represents a nerve complex which combines both vaso-constrictor and vaso-dilator fibers. If one, therefore, finds the right spot in the sympatheticus it is quite possible to produce at the same time both paralytic and irritative symptoms. Irritation of the upper thoracic portion causes exophthalmus, rapid pulse, conjestion of the thyroid, etc.

Eichhorst, in writing of hemorrhage into the internal capsule, says: "At times symptoms of sympathetic paralysis occur (unilateral redness of the face, unilateral sweating, retraction of the eyeball, narrowing of the palpebral fissure, contraction of the pupil)." Further, Eichhorst says: "In consequence of paralysis of vasomotor nerves, dilatation of the blood-vessels, redness of the face, neck and upper portion of the chest down to the

nipple occurs. The alterations naturally may recede after a time, but be replaced by a diminished fulness of the vessels. At the same time, profuse sweating occurs. Paralysis of the unstriated muscles of Muller in the orbit gives rise to retraction of the eyeball and narrowing of the palpebral fissure. The pupil is contracted and reacts but sluggishly to light and not at all to sensory irritation. Trophic disorders may gradually arise, as for instance, atrophy of one side of the face." Further, "Irritation of the cervical sympathetic is primarily atttended with dilatation of the pupils—spastic mydriasis; often the power of accommodation is also impaired; occasionally protrusion of the eyeball and widening of the palpebral fissure occur in consequence of irritation of the muscle of Muller. As a result of vaso-motor spasm the carotid and temporal arteries at times are contracted and the side of the face and neck are pale and cool and sweating may be absent. Trophic disorders may develop within a short time and give rise to disfiguring unilateral atrophy of the face."

Eulenburg and Guttmann record a case of unilateral sweating which they believed was undoubtedly due to paralysis of the cervical sympathetic, but considered them rare. Other cases were reported by Verneuil, Ogle, Otto, Nitznadel, Baerwinkel, Chvostek and Pokroffsky. According to Graupner, three of the chief symptoms of Basedow's disease, exophthalmos, Grafe's sign, and tachycardia, can only be explained through a permanent irritation of the cervical sympathetics, while the struma is explainable on the assumption of a paralysis (causing dilatation of the vessels and increased growth). He says further, that struma has never been observed in evident sympathetic paralysis.

According to Paul Guttmann, injury or pressure on the cervical sympathetic causes redness and increased

temperature of the corresponding side of the body, myosis, diminution of the palpebral fissure and retractio bulbi. Bernhardt reported a case of gunshot wound of the left side of the neck with characteristic paralysis of the left cervical sympathetic in which the left side of the face and left upper half of the body did not sweat even in a Roman bath, while the right side sweated normally. Stewart reported a similar case of sympathetic paralysis due to a bullet wound in which there was on the paralyzed side myosis, narrowing of the palpebral fissure, enophthalmus, and anidrosis.

Nicati says that when the cervical sympathetic is paralyzed there is first a period of excitation in which the sweat is diminished; in the second stage when paralysis is fully established there are the same symptoms on the part of the sweat secretions as are noted after division of the cervical spinal cord, that is, marked hyperidrosis; in the third period atrophic lesions accompany the continued paralysis and the secretion of sweat is again diminished.

Jacobsohn reported a case of left-sided myosis and narrowing of the lid fissure with exophthalmos, atrophy, dryness and pallor of the left side of face. Also there was struma, visible pulsation of the vessels of the neck, arterial murmurs, tremor of the hands and the fingers, pulse 120 to 160, and at times palpitation and uneasy feelings about the heart. The author believed that the cervical sympathetics carry not only fibers whose irritation causes narrowing of vessels, but also other fibers whose irritation causes dilatation. The first fibers, according to him, supply the circular muscle fibers, and the latter the longitudinal muscle fibers, and in this way explain the pallor occurring with sympathetic paralysis.

Laborde removed the three cervical sympathetic ganglia in guinea-pigs and noted after it permanent ptosis, retrac-

tio bulbi and myosis on the operated side. When the first thoracic ganglion was removed death quickly followed.

According to Landois and Stirling stimulation of the cervical sympathetic in man causes dilatation of the pupil, pallor of the face, occasional hyperidrosis, disturbance of vision for near objects and protrusion of the eyeball with widening of the palpebral fissure. Paralysis or section of this nerve causes flushing of the blood-vessels on the side of the head with occasional anidrosis, contraction of the pupil, retraction of the eyeball and narrowing of the palpebral cleft (Lloyd).

Mobius recorded a case of sympathetic paralysis with myosis, valvular dilatation and anidrosis, and Van Harlingen mentioned a similar case in which the affected side was warmer, but there was no excessive secretion.

Riehl reports a case similar to Guttmann's in which the pupil was dilated on the sweating side, and considered that there was paralysis of the vaso-motor fibers and irritation of the oculo-pupillary fibers, although he believed it quite as reasonable to explain the case as irritation of the vaso-dilators as by paralysis of the vaso-constrictors. In his case a decided symptom of irritation—mydriasis—was associated with hyperidrosis and vascular dilatation, and he considered the explanation of all these symptoms as a result of the irritation of the fibers in the sympathetic to be reasonable. The autopsy in his case showed a round cell infiltration and small hemorrhages in the superior cervical ganglion on the affected side.

Onuf and Collins sum up the symptoms which have been observed to occur after injury to the cervical sympathetics in man as follows: (1) myosis, (2) narrowing of the palpebral fissure, (3) retraction of the eyeball, (4) lessened tension of the eyeball, (5) redness of the surface and elevation of the temperature of the ear and face on the affected side, (6) hyperidrosis—anidrosis, (7) in-

creased secretion of saliva, (8) hemiatrophy of the face, (9) bradycardia, (10) headache, nervousness and cephalic pressure.

The foregoing views of different authors are conflicting in many details, and it is quite possible that the explanation is to be sought in the different portions of the cervical sympathetics experimented with, and the extent of the lesion. Experimental work has shown very conclusively that the phenomenon of sweat secretion is entirely independent of dilatation of the blood-vessels, and indeed we are all familar with the fact clinically, in such cases as sweating accompanied by pallor. Profuse sweating may often accompany a pallid skin, as in nausea or fright, while the flushed skin of fever is often associated with anidrosis. Marked sweating has also been observed after death.

According to Cassirer, Ludwig Ostroumoff ligated the aorta and irritated the nervus ischiadicus and produced sweating in a cat's paw. Luchsinger and Kendall showed that irritation of the nervus ischiadicus or the nerves of the plexus brachialis in dogs or cats produced sweating even when the temperature of the paws was falling. The sweating occurred after ligature of the arteria crurialis or the aorta, or even a quarter of an hour after amputation of the leg, and Adamkiewicz produced it forty-five minutes after death. It is therefore not dependent on the circulation. Luchsinger showed that after section of the nervus ischiadicus the foot did not sweat. Irritation of the cerebral cortex in animals gave a negative result (Adamkiewicz and Vulpian). Nevertheless, Senator found marked sweating limited to the arm in the case of apoplexy with cortical ataxia and occasional cramps in the left arm. The autopsy showed an abscess in the corresponding portion of the cortex. Adamkiewicz observed

a similar case. Seeligmuller reported a case of right-sided motor paralysis, hyperesthesia, and increased sweating of the paralyzed side, which the author attributed to severe hemorrhage near the central ganglia of the left hemisphere and in the posterior part of the internal capsule. Other cases of hemiplegia with marked sweating on the paralyzed side have been reported by Binger and Bury, Messadaglio and Lombroso, Chevalier, Bichat, Raymond, Seeligmuller, Strumpell, Gowers. The writer has also observed it in hemiplegia.

Kaposi reported a case of crossed unilateral sweating in which the left side of the face and right side of the body sweated. Other cases have been reported by Wilson, Pandi, and by Bower.

Nawrocki and Adamkiewicz believed that there existed a common center for all sweat nerves in the medulla oblongata. Adamkiewicz noted a case in a man of gradual diplopia with paralysis of the eye muscles and attacks of profuse sweating. The autopsy showed a bean-sized glioma about the middle of the floor of the fourth ventricle.

There is good reason to believe that the nerves controlling sweat secretion pass through the spinal cord. Schaefer, after hemisection of the cord in monkeys and cats, found the limb on the paralyzed side swollen and warm (vasomotor paralysis) and lessened outflow of lymph, and the skin dry (diminished sweat secretion). Batten, in discussing hematomyelia, says: "When the lesion is in the cervical region, myosis of one or both pupils may be present, dropping of the eye-lid, and slightly raised temperature on one side of the face as compared with the other." As has been pointed out above, sweating usually accompanies these phenomena. Centers for sweat secretion seem to lie also in the spinal cord, according to Luchsinger and Adamkiewicz. Cases of anidrosis in infantile

spinal paralysis (reported by Erb, Adamkiewicz, Von Leyden and Goldscheider) render it probable that it is in the neighborhood of the motor centers of the anterior horn. Also, in multiple sclerosis, hyperidrosis unilateralis faciei has been observed, and Oppenheim observed in this disease abnormal sweating of the extremity of one side, associated with lowering of the temperature of the same. According to Kocher the oculo-pupillary fibers of the cervical sympathetic are distributed throughout the whole length of the cervical cord, and leave it with the first dorsal root, and from analogy one would think the same of the secretory fibers. Schlesinger, in a case of central tubercle from the first to the fourth dorsal segment, with hyperidrosis of the right side of the face, found at the autopsy a distinct degeneration in the lower cervical cord in the lateral marginal layer, in the obtuse angle between the anterior and posterior horns. Luchsinger and Nawrocki concluded from their experiments that the sweat nerves passed through the rami-communicantes to the sympathetics, while Vulpian and Adamkiewicz believe that a more or less greater part of the fibers pass directly from the cord to the nerves. More recently Langley disputed that there are sweat nerves going directly to the cerebro-spinal nerves, without touching the sympathetics. Langley found for the forefoot of the cat that the sweat nerves arose from the fourth to the ninth dorsal nerves in the cord, and pass as Nawrocki showed to the ganglion stellatum. From their experiments on sweat secretion, Omuf and Collins thought it probable that not all sweat secretory fibers of the fore-paw of the cat pass through the stellate ganglion (sympathetic), and through the main trunk of the sympathetic in general, as Luchsinger and Langley assume, but that a good portion of them follow other pathways. They concluded also that the cervical

sympathetic contains not only pupil dilating fibers, but very probably pupil contracting fibers as well. They showed furthermore that the myosis caused by resection of the stellate ganglion, which implies severance of the cervical sympathetic nerve, disappears entirely, or almost entirely, within a few months, proving by this compensation of function that not all pupil dilating fibers are furnished by the cervical sympathetic nerve. They found that extirpation of the stellate ganglion caused an immediate and remote increase in local temperature of from 1 degree to 2 degrees F. Adamkiewicz gives the center for sweat nerves for the upper extremity in the lower cervical cord. Langley found no direct spinal sweat nerves. Their further course was through the ulnar and median nerves. In the head they appear, at least in many animals, to run in the trigeminus. Adamkiewicz maintained that irritation of the facialis trunk caused sweating. According to Nawrocki, the skin in facial paralysis has a parchmentlike dry appearance, and Straus and Bloch found that, in severe peripheral facial paralysis, with the appearance of facial atrophy, the sweating capacity was lost, which could be demonstrated by pilocarpine injections. This opinion differs from the experience of Ketly and Pandi. According to Teuscher both paralysis and irritation of the nervus facialis can cause sweating. Biehl found redness and sweating brought on by eating solid food, and decreased sensation following a stab wound of the facial nerve near the left ear. According to Cassirer, the sweat nerves apparently run in the motor nerves. Windschied found in a fresh case of facial paralysis, with the reaction of degeneration, hyperidrosis of the paralyzed side; both disappeared together under electrical treatment. Here, as in other peripheral nerves, the hyperidrosis seems to mark an early and incomplete stage of

paralysis, while an old and complete paralysis is accompanied by anidrosis.

According to Levy-Dorn, the sweat nerve fibers finally separate from the motor fibers to a great extent, so that in the nervus plantaris internus of the cat, he found an almost pure sweat nerve free from motor fibers. Dehio, in a case of erythromelalgia, found hyperemia and continuous sweating of the hand. The ulnar artery and nerve were resected, after which the little finger became pale and dry, while the rest of the hand continued to sweat. Dehio attributed both the hyperemia and sweating to irritation of the vaso-dilator and sweat secretory nerves.

I have had several opportunities to observe cases of localized hyperidrosis or anidrosis following injuries to peripheral nerves, and I give here a brief account of a case of peripheral nerve paralysis, with the alterations in sweat secretion.

H. D., aged thirty-seven was admitted to Dr. Thomas's clinic in the Johns Hopkins Hospital Dispensary on the 27th of May, 1901 (C. 4820), on acount of a traumatic injury to the nerves of the left arm. On the 9th of November, 1900, the patient fell from a trapeze and injured his elbow on the back of a chair. Following the injury, there was extreme swelling of the whole left upper extremity, shoulder and the neighboring part of the chest. His doctor advised amputation of the arm on account of its turning black, but he refused to have it done, and applied for admission to the Johns Hopkins Hospital on the 1st of March, 1901. At this time there was no evidence of anesthesia in the arm or hand. Dr. Halsted's diagnosis was old dislocation of the left elbow (compound formerly), backward and outward, with fracture of the internal epicondyle. On the 21st of March, 1901, Dr. Halsted performed a partial incision of the elbow joint.

After the operation there was entire loss of sensation along the distribution of the ulnar nerve and the patient was unable to move any of his fingers. He developed a streptococcus infection, and a second operation was performed. After an Esmarch bandage was applied, the ends of the ulna, radius and humerus were exercised. The patient steadily improved after this, and on the 31st of March the circulation in the arm was apparently very good, the fingers were warm, but sensation in the little and fourth finger was lacking. On the 8th day of April he was able to perceive a pain prick in the little finger for the first time. He was, however, unable to move his fingers or thumb. On the 3d of May, 1901, it was noted that the area of cutaneous anesthesia corresponding to the ulnar distribution on the dorsal and palmar surfaces of the fingers, palm and wrist of the left hand was still present. On the 11th and 12th of March the patient complained of pain in the wrist and fingers. For about a week and a half he has noticed attacks of sweating limited to the back of the left thumb and accompanied by general sweating. These attacks of localized sweating are limited always to the back of the left thumb, and last about three quarters of an hour. On the 16th of May, 1901, the area of sweating was carefully noted and it was found that the distribution of the median nerve on the hand, thumb and lower forearm was distinctly marked out by the area of perspiration standing out in large beads. There was distinct lowering of the temperature on the portion of the hand supplied by the ulnar nerve. He was not able to move any of his fingers until the 20th of May, and there was anidrosis in the ulnar area, with hyperidrosis in the median area. On the 23d of May he noticed for the first time sweating of the hypothenar eminence of the left hand. He is still having about two or more attacks of

sweating a day in the median area of the hand and lower forearm. Stimulation of the nerves to the inner side of the biceps above the elbow joint produces movement in all fingers, especially in the thenar eminence and index and middle fingers. Contraction is present, but is less in the middle and ring fingers. On the 26th of May the muscles of the hand and forearm did not respond at all to faradic stimulation, and the muscles of the upper arm but slightly, but they responded slowly to galvanic stimulation. The K. C. C. seemed less efficient in comparison with the A. C. C. than normal. There is still anesthesia in the area of the ulnar nerve. The course of this symptom was as follows: There was first noticed hyperidrosis of the median area with irritative symptoms (pain), and anidrosis of the ulnar area with anesthesia. In the median area, as motion returned, the sweating diminished and finally became normal. The treatment consisted of massage, electricity and passive motion.

This case is of exceptional interest and may be interpreted as indicating that a complete paralysis of the peripheral neuron is accompanied by anidrosis, while a partial paralysis is accompanied by hyperidrosis. With the return of normal nerve function the sweat secretion also became normal. Sweating may therefore be regarded as being of importance in the prognosis, indicating, if present, a condition of irritation or incomplete paralysis. It seems not improbable that, in the sympathetic as in the peripheral nerves, the sweating may have a relation to the degree of paralysis.

I have collected statistics from 107 cases exclusive of my own case of unilateral sweating, and find the syndrome of myosis, redness, increased temperature and unilateral sweating on the same side present in such a large majority of the cases that they must at least be regarded as the rule.

The temperature on the sweating side in thirty-two cases was increased in twenty-seven. Equal in four. Decreased in one.

Redness was present in twenty-nine cases. Not present in three cases out of thirty-two cases in which a note was made on this point.

Myosis has not proven such a constant concomitant. Thus, in forty-seven cases, the pupils were larger on the sweating side in nine. Smaller in twenty-three. Equal in fifteen, but it is very probable that a slight difference in the size of the pupils in the last group was unnoticed in some cases. Moreover, many of these cases in which the pupils were equal or larger were evidently not cases of sympathetic affection, so that the occurrence of myosis has really a greater relative frequency than appears in this table.

The further statistics show also some points of interest. While the ratio of patients who come under observation is usually two females to one male, the proportion of cases of unilateral sweating is about reversed; thus there were fifty-seven males and twenty-five females affected with unilateral sweating.

Although there is some difference in the anatomy of the sympathetic nerves on the two sides of the neck, there is no great difference in the frequency of unilateral sweating on the two sides. It occurred on the right side in forty-four cases. On the left side in thirty-three cases.

The palpebral fissure was larger on the sweating side in five cases, and smaller in six, but four of the latter were due to ptosis.

The affection is most common between the ages of twenty and fifty, in which period forty-eight out of sixty-four cases occurred, but one case was observed in the first decade, and one in the ninth decade.

The duration is very variable, lasting from a few weeks

to a whole lifetime. In one case it had been known to exist for sixty-eight years, and in a majority of cases in which the duration was noted the patients gave a history of some years' duration.

Amongst the symptoms affecting the respiratory system we find mentioned: Rapid respiration; shortness of breath; choking sensations; suffocation; tuberculois (5 cases); bronchial catarrh; affections of the speech (2 cases); pleurisy (2 cases); dysphagia, salivation.

On the part of the heart and blood-vessels we find mentioned: Angina pectoris, aneurysm, cardiac palpitation, heart disease.

In nine cases tumors were present; aneurysm (3 cases); thoracic tumor; abdominal tumor; pregnancy (3 cases); tumor of the scapula. In the cases reported by Gairdner, the symptoms were evidently produced by the pressure of the aneurysm on the cervical sympathetics.

In one case unilateral furunculosis was observed.

Gastric disorders were present in seven cases, and constipation was noted only twice, so that it is doubtful if the latter plays the important part in the production of the disease that it was once thought to play. It is, however, such a common ailment that it may have been overlooked, or no importance attached to it.

Unilateral coating of the tongue, unilateral paresis of the tongue (2 cases) and unilateral atrophy of the tongue have been observed in association with unilateral sweating.

Affections of the parotid gland have been an important etiological factor in this disease. In eighteen cases some affection of the parotid was noted, as: Parotid suppuration or abscess (10 cases); parotitis (4 cases); injury to the parotid; parotid fistula (2 cases); parotid tumor, operation. In many of these cases the unilateral sweating appeared after the scar formation. Its importance is ex-

plained by its intimate association with the nerves in the neck.

Other nervous symptoms were present in very many cases, but owing to their great number, I shall mention those only which occurred more than once. Epilepsy (9 cases); headaches (8 cases); hemicrania (7 cases); tabes (3 cases); motor nerve paralysis (9 cases); tenderness over the sympathetics of the sweating side (3 cases); sub- and peri-orbital pain (3 cases); hemiplegia (4 cases); sweating in the area of the fifth nerve (2 cases); insanity (11 cases); rheumatic pains (2 cases); tic douloureux (3 cases); neuralgia (5 cases); emotional excitement (10 cases); spinal curvature (2 cases); insomnia (3 cases); weakness on the sweating side (3 cases); cramps (2 cases), tender spinous processes (3 cases).

Eye symptoms have been very common, and amongst the anomalies mentioned are: Squint; ptosis (7 cases); diplopia; exophthalmos; enophthalmus (2 cases); conjunctiva injected (7 cases); bloody tears; eye destroyed; asthenopia (7 cases); hemiopia; eyeballs soft; catarrhal conjunctivitis; nystagmus.

Amongst the miscellaneous symptoms which have been mentioned are facial asymmetry in twelve cases, struma in six cases, a history of lues in three cases, complexion darker on the affected side; anemia in three cases, othematoma, and diabetes.

Many causes are given for the sweating attacks, such as exertion (17 cases), eating (21 cases), eating acid foods (4 cases), pain (in many cases), on change of posture (4 cases), fatigue, smoking, etc. The sweating affected an entire half of the body in eighteen cases.

The following classification of cases of unilateral sweating has been brought together by Teuscher from the works of Raymond and Kaiser:

1. In consequence of affection of the central nervous system.

(*a*) Brain. Raymond and Kaiser gave ten cases representing dementia paralytica, hemiplegia, brain congestion, hyperostosis of the skull, and epilepsy.

(*b*) Unilateral sweating in consequence of diseases of the spinal cord, as in tabes (2 cases), syringomyelia, and myelitis.

2. Hyperidrosis unilateralis in affections of the sympathetics (20 cases).

3. Hyperidrosis from affections of the trigeminus, facial nerve, and parotid disease (19 cases). Teuscher thinks it better to state this class "Hyperidrosis unilateralis following affections of peripheral nerves," since hyperidrosis can follow neuritis of any nerve.

4. Reflex hyperidrosis (15 cases collected), such as psychic disturbances, gastralgia, local nervousness. To these four groups of Raymond's, Kaiser adds a fifth group.

5. Ephidrosis unilateralis accompanying or following infectious diseases, without other nervous symptoms, as in typhoid fever, but this group is little supported by clinical cases. Teuscher very properly proposes to change group 4 to—

4. Hyperidrosis unilateralis due to (nervous) psychic degeneration, or "hyperidrosis unilateralis degenerativa." Under this class would come migraine, hysteria, morbus Basedowii, hypochondria, neurasthenia, etc.

I am inclined to regard this as one of the most important groups, and would place here the case reported above, although his symptoms undoubtedly indicated a disturbance of the cervical sympathetic nerves, and as it was intermittent, probably of a functional nature, the psychical element seemed to play an important role.

SUMMER COMPLAINTS OF CHILDREN.

By SAMUEL A. VISANSKA, Ph.G., M.D., Atlanta.

As a student of pediatrics, I take great pleasure in presenting this subject to you for discussion, and while many will differ with me in what I shall have to say, still my sole object is to try, if possible, to lower the death-rate of infants and children. The heated term will soon be upon us, and judging the future by the past, hundreds of children will be carried to their graves. What a great responsibility, then, on the part of the physician, and if by an exchange of ideas we can come to a better understanding how to combat disease, what a blessing it will be to all in the future. By summer complaints of children will take up gastro-enteritis, entero-colitis and colitis I make this division of the diseases as we usually see them. There have been and exist to-day so many theories as to the cause of summer complaints that time will not permit me to take them all up, but there is one theory above all others that I desire to see eliminated from the minds of every physician and layman; this is the teething theory. Possibly this theory dates back to the time of Adam and Eve when they first became parents, and while I cannot find anything definite as to that, possibly their children were teething and had summer complaints. This theory has been instilled into the minds of not only the physician but every other human being on earth, and I believe it is this theory alone that is responsible for the large death-rate. Do not misunderstand me by this broad assertion, and perhaps I had better make myself more explicit. Being called to a lit-

tle patient during the summer, the first question we ask the mother is, what seems to be the trouble with your baby? Nine times out of ten the answer is, the baby is teething and the bowels are running off; when I read this I imagine I am treating a case of summer diarrhea, it sounds so familiar. Questioning the mother further, how long has the baby been sick? Answer, four or five days. Have you called in another physician? No, the baby is just teething and I thought it was natural for the bowels to run off. What have you given the child? Well, I gave it a dose of oil, that did not seem to do any good, then I gave it calomel, then the good old grandmother comes along with her grandmotherly advice; then one of my neighbors heard the baby was sick, said her baby once had the same trouble, so I tried her remedy, but it did not have the desired effect, so I had to call you in. Thanks for the high honor conferred upon us. After the mother, grandmother and blessed neighbor fail they call in the doctor. Then we ask how many stools is the child passing; the answer is anywhere from twelve to twenty. Upon examination you find the child almost a skeleton, face pinched, eyes sunken, great thirst, child restless, perhaps fever and delirium. Such is a picture often presented to us at the bedside. Gentlemen, is it not criminal to wait so long before calling in a physician; is it not criminal for the mother, grandmother and neighbor to prescribe? I put this in strong terms, because it is time the habit was stopped. To my mind teething has absolutely nothing to do with diarrhea, and every modern text-book on pediatrics will agree with me. We forget that children born at a certain time will teeth during the winter; how many cases of winter diarrhea are you called to attend? Nearly all the diseases of children have been ascribed to teething, but there is no one who does not admit that some children may have teeth without any great

amount of disturbance, or, indeed, that teething may go on without producing any symptoms at all; therefore we have normal, and abnormal teething, or better still, teething in healthy, and teething in unhealthy children. The greater part of teething is accomplished before the child is born. At about the seventh week of fetal life the epithelium within the mouth is thickened, forms a ridge, and at the same time dips into the embryonic tissue about to form the jaw. This epithelial process is called the enamel germ; it grows so as to surround a flask-shaped cavity, which it lines; partitions develop into this, forming ten cavities for each jaw. A papilla is now developed which, pushing up towards the embryonic tooth, forms a complete mould for the enamel germ to rest upon, and is called the dentine germ. We now have the beginning of the ten temporary teeth in the form of partitions, the enamel and dentine germ and the papilla. The connective tissue around these primitive teeth has at the same time been forming in the dental sac an investing membrane for each tooth. In the partitions, as well as the rest of the jaw, bony tissue is being formed; the teeth become farther separated from each other, and by this deposit of bone the alveolus is formed, lined by the dental sac, coherent with the gum along the borders of the jaw. This process of development has taken the whole period of fetal life, so that the child comes into the world with all its temporary teeth fully formed within the jaw. The permanent teeth are formed, in so far that the enamel-germ is developed from the enamel-germ of the temporary tooth as a small sac, from which subsequently the development goes on, as already described for the temporary teeth. The topographical relations of the teeth at birth are as follows: Above, the tooth sac, the submucous connective tissue and the mucous membrane itself, on either side, the tooth-sac and the bony tissue. There is no

bony tissue to impede the tooth on its way to the oral cavity. All that it needs to overcome is the submucous coat, the mucous membrane and the dental sac, which is very thin. Not enough stress can be laid upon the fact that the opening of the alveolus is wider than necessary to allow the tooth to pass through. Calcification of the fangs begins, and as the tooth becomes elongated by means of this, it is slowly forced in the direction of least resistance, the mouth. Pressure is directed toward the mouth; the papilla cannot be pressed upon, for the simple reason that where, during growth, blood-vessels come in contact with the bony substances absorption of the latter is produced, the blood-vessels not being affected. In regard to the symptoms produced by teething, it can be definitely stated that in a healthy child teething goes on without producing any symptoms of any sort. In children of a nervous temperament we sometimes find them a little fretful or cross, and in the evening a slight rise of temperature. There is no treatment for teething, as it requires none. Even an increased flow of saliva should not be overlooked, as a stomatitis should be carefully treated. There is no intimate connection between healthy dentition and the flow of saliva. What an easy diagnosis to make and what little responsibility on the part of the physician, and some of us haven't the nerve to disagree with the mother, even though we differ as to etiology. A child dies of teething and summer complaint, little is though of it; let a child die of diphtheria, the people throw up their hands in horror—the taking away is just the same. In looking over the death record in Atlanta, I see several cases of teething reported, and I am only surprised that the Board of Health accepted such a death-certificate. A diagnosis of heart-failure would be far more scientific, yet the Board of Health will not accept such a diagnosis, and they are quite right. As to

the true causes, I attribute heat, power of resistance, bad ventilation, overcrowding, improper diet, too much diet. Clinical experience teaches us that infants do not stand extremes of heat and cold, producing diarrheas and pulmonary troubles. My opinion is that the extremes of either lower the power of resistance, and that bacteria does the rest.

Treatment.—As to the treatment, suppose we all agree that teething is the principal factor, the treatment will be just the same. As I have already said, "there is no treatment for teething"; there is treatment for summer complaints. We have nearly as many remedies as there are stars in heaven; every physician and old granny have their favorites. My idea is, the fewer remedies used, the better results will be obtained. In the short time allowed to read this paper will only be able to take up the principal points of treatment and not go into detail, though this is a very important factor. All cases of entero-colitis are not true cholera infantum, and Rotch has placed this disease where it belongs, under specific infectious diseases, caused by a specific organism and characterized by acute gastro-enteric disturbance with intense choleriform symptoms. The term cholera infantum should be exclusively restricted to this class of cases, and should not be used to designate the many acute and serious attacks of vomiting and diarrhea which are so often designated cholera infantum. It is a rare disease, and Rotch is correct. Recently a serum has been discovered which is said to be almost a specific for this disease, and I trust it will soon be placed upon the market. Being called to a case of entero-colitis we will for the present treat both alike. At the beginning four things are to be considered: (1) To assist the effort which nature is making to free the stomach and intestine from the poison which is in them; (2) to restore the surface circulation

which is so seriously interfered with; (3) to supply water to the tissues which are being drained to so great an extent; (4) to support the strength until the disease has run its course. The poison seems to act with especial violence upon those portions of the economy where it is most concentrated—namely, the stomach and intestines. We therefore have at first extreme irritation of these parts, which causes increased peristalsis, and later vasomotor paralysis, with great transudation of serum. This condition of the gastro-enteric tract should be borne in mind during the whole course of our treatment. The condition of the mucous membrane is such that absorption of drugs does not take place readily; therefore, great care should be used in their administration, owing to the cumulative action of them. In the acute stage the digestive functions fail to act; therefore, food of any kind would be "adding fuel to the fire." Not a drop of milk should be given. This prohibition of milk must be absolute, whether from the mother, wet nurse or sterilized. You are dealing with a poison more deadly than arsenic. The second thing to do is to remove as far as possible the poison in the alimentary canal. Taking a lesson from nature, the vomiting and purging are attempts to eliminate the harmful substances, but like other attempts on the part of nature are ineffectual and exhausting. The washing of the stomach and intestine should be done at once. Delay is dangerous. The stomach can be washed with warm water containing a teaspoonful of common salt to the pint. After this organ has been thoroughly cleansed, three to five grains of calomel should be given dry on the tongue. If vomiting returns, repeat the irrigations. Of course the calomel is given for its anti-fermentative action, and in order to reach the small intestines, which are inaccessible by the process of irrigation. The bowels should be irrigated with warm

water and castile soap, not less than a gallon of water being used. A little later an injection of cool water containing thirty grains of tannic acid to the pint should be used. Some of the poisons formed are, as we all know, proteids which are precipitated by tannic acid, therefore the object of the tannic-acid irrigation is to render inert any soluble poisonous proteids which may remain in the intestines after the first washing. If the rectal temperature is very high, ice cold water can be given by enemata. When the vomiting has continued for some time and there is prostration with great thirst, the infant should be allowed to suck sterilized ice cold water from the bottle (to which a few drops of brandy have been added). If vomiting and diarrhea continues to be excessive, a hypodermic of morphine 1-100 grain, atropine 1-800 grain should be given for an infant a year old. The effect should be carefully watched, and the dose repeated if necessary. To restore the circulation or if there are signs of collapse, nothing is better than the hot pack. This should be done by wrapping it to the chin in sheets wrung out of water at least as hot as 100 F. It should then be enveloped in a hot blanket. This procedure should be repeated as often as necessary. While the infant is in the pack water can be given freely by the mouth, and a subcutaneous injection of normal salt solution should be given. To keep up the heart's action minutes doses of strychnin, digitalis, and nitroglycerin are at times indicated. As the disease clears up, a little sterile food should be given. The child should be kept outdoors as much as possible, fresh air being an important factor in all diarrhoeal disorders in summer.

Entero-colitis.—The dietetic management and internal treatment are similar to that of the preceding disease. A dose of castor oil, then calomel, is to be promptly administered, and followed in a few hours by copious irrigations of

the colon, preferably tepid saline solutions. Later a thin starch solution to which a few minims of laudanum have been added may be gently thrown into the rectum, to be repeated if necessary. For intestinal putrefaction nothing is better than salol and salicylate or subnitrate or bismuth, though every physician has his favorite prescription. Opiates should only be given when absolutely necessary.

Colitis.—In the treatment of colitis we have three things to combat: tenesmus, the passage of mucus and blood, and a great many stools. The diet should be easily digested food; panopeptone, peptonoids, egg albumen, etc., should be given. Our object now is to relieve the straining, lessen the frequency and change the character of the stools. Nothing acts better than the following:

℞ Magnesia sulphas.....grs. v
Tr. opii deod.....gtt. ss to gtt. i
Syr. tolu.....m. xv
Aq. menth. pip.....q. s. ʒi
M. Sig.—At a dose, every two hours, for a child one year old.

The opium should be ordered separately, as you might want to increase or decrease the dose, or leave it out entirely.

After a few doses you will get the desired effect; then large doses of bismuth subnitrate should be given—say to a child one year old a half drachm every two hours. Don't be afraid to give the bismuth; small doses are useless. High irrigation of the colon (normal salt solution) should be given morning and evening, and an occasional dose of calomel and soda is often required. During convalescence tonics are indicated. A change to the mountains, country or seashore will often prove beneficial. As to the best method of feeding infants, will refer you to my article on "Infant Feeding" read before this Society two years ago.

DISCUSSION ON DR. VISANSKA'S PAPER.

Dr. McHatton: This is probably one of the most important papers that will be brought before the Association this year. This so-called teething causes greater mortality in Georgia than any other disease that we will discuss. I am glad that the doctor brought it up. It is very unfortunate that we cannot eradicate the popular idea that teething is the cause of these intestinal troubles. More children die in the summer from "teething" than from all other diseases combined. The idea that it is due to teething is perpetuated by the mother, the grandmother, the nurse and the doctor. I often see cases which the doctor has diagnosed as due to teething. They do not seem to remember that children are teething as much in winter as in summer, that bottle-fed babies teeth the first summer as a rule and nursed babies the second. We will have to make a persistent fight from a professional standpoint, and constantly assert that this condition is always due to improper feeding and never to teething. Let them know that teething has nothing to do with it. Often the parents will neglect a diarrhea and say that the baby is teething, and the doctor is not called until it is too late to do anything. We have an illustration when we take the negro children of the present time and compare them with those of the olden time. On the plantations in Louisiana we had a nursery, and when a child got sick it was sent there and the mother could not take it out or feed it. The mortality then was almost nothing, and you know what it is to-day. I am in the habit of starting in with the mother the day the child is born and impressing upon her the idea that the child should be properly fed, and when the time comes for weaning they know what they should do. I furnish my patients with a weight chart, and have them weigh the baby each week and see the result. In this way you can teach them

to look after the child intelligently, and when there is anything wrong they will consult the doctor instead of going to the grandmother.

I saw a case recently which they said was teething, and when I asked them what it had eaten, they said "nothing but some ice-cream and ham for supper." This type of feeding is the cause of the vast majority of these cases, and it is of vital importance to impress upon the mother that teething has nothing to do with the gastric intestinal diseases of children so common and so fatal, especially in the summer.

Dr. Ross: I was very glad to hear the doctor's paper. Like Dr. McHatton, I start with the mother at the time of the birth of the child, and impress the mother that teething has nothing to do with these intestinal disturbances. The grandmother usually sits by and says that she knows better. I try to impress them with the fact that teething is a natural process, and I have often told them that there is a graveyard full of babies that would not be there but for the old idea that all children must have diarrhea. I want to commend the paper, and I think that more lives can be saved this way than by operating on lacerated cervices.

Dr. Thrash: There is no denying that the impressions which have prevailed in the past are the fault of the physicians, and we must impress the mothers with the fact that these disorders are not due to teething, but that teething is a physiological process. We should begin in time, and impress the mother that teething is a natural consequence, but that diarrhea and "summer troubles" are due to other causes. As the doctor said in reading his paper, these impressions are largely attributable to the physicians. In a number of diseases the nature of which mothers do not understand, the physician is blamable in not having the backbone to explain the real condition instead of ac-

ceding to the traditions of the dark ages. We should tell the mother that teething has nothing to do with that train of symptoms often called by this name and that it is due entirely to diseases of the digestive tract.

Dr. Visanska (in closing): In closing I want to thank the gentlemen who have discussed this paper. I believe that we are all in unison on this question of teething, and I would like to ask every physician present, as a personal favor, to go out and preach to mothers that teething has nothing to do with summer diarrhea, and I believe the death-rate will be lowered quicker than by any other way. As long as the physician is called in so late, of course the death-rate will continue to be high. In the reports from the cities you will see that the death-rate from this trouble is larger than all of the contagious diseases put together. If the doctor is called in time he will in a few days be able to eliminate this trouble.

WHAT IS MEANT BY "REGULARS" IN THE CODE OF ETHICS OF THE AMERICAN MEDICAL ASSOCIATION?

By L. G. HARDMAN, M.D., Harmony Grove.

What is meant by Regulars in the code of ethics of the American Medical Association? Does it mean that we are allowed only to visit patients, look at their tongues, feel their pulse, look wise, and prescribe a mercurial, or a latter-day doctor some vegetable medicine for the inactive liver?

Do we find that we have passed from the emetics and bleeding, blistering and sweating, and by that do we encroach upon any one's rights? (Thompsonian.)

Are we allowed to prescribe fresh air, gentle breezes, or even pure oxygen? Can we prescribe baths of pure water, or even venture to prescribe both pure and medicated waters? Can we allow our patients to let fresh air in their rooms, or leave their doors or windows open at night? Would we violate any obligation should we send our patients to the mountains or seashore for the restoration of health, or any spring for the healing power of the fountain free from mother earth? Can we ever become more modern and allow one of our patients to be treated by a specialist along the line infirmary, sanatorium, and other places for the infirm? Do we think it would be getting out of the code of ethics, which has the word regular in it, if we should prescribe electric current from the static machine?

Could we dare to come down to the treatment of disease

with antitoxins, or all or any of the more modern therapeutics?

What about massage, vibrations, or the intense rays of light? Do you think the modern doctor could, without criticism, administer hypnotism or physical power, or both? Would he be in line with the profession should he prescribe any other drugs and in any other form than those prescribed by the doctor of long ago?

Do you not think that the great power of medicine of long ago was transmitted power, by looking wise and not saying too much? The drug certainly acted more powerfully on that line after the prtient was told how billious he was, and how poisonous the green bile was, and how the medicine would clean the liver off.

They would be willing to be sick for two weeks to get rid of that bile. I am glad to say the time has been reached when more than drugs constitute the practice of medicine, and that patients can know doctors not only by their bad medicine but other forms of healing art.

The time has come, and is here, when we should know something more of the position we occupy in the scientific world as health preservers and restorers, and where are our latitude and longitude, so that, when any new thought shall leap forth from some ethereal source, or evolve from the crude brain of some mountain country doctor, or be sweated out by some wiregrass Georgia cracker, we may know whether to wait for the code of ethics to indorse it or not. What would our fathers in medicine, who used the chop ax under the bed to stop pain, or the absurd remedies for the treatment of the ear and the den of the snake as the source of information, say to-day if they should see the modern therapeutics, physical influences, mechanical means, aseptic surgery and electric appliances for the treatment of disease? They would denounce them as false and spurious.

It is not my intention to attack any other branch of the

medical profession, or censure in any way our own. To the contrary, I want to bring to our notice the position we should or do occupy. The word allopathy was applied incorrectly to our profession, and the name we claim is regulars, or formerly the old school. Now there is an impression that we are bound to certain prescribed rules of practice, and not allowed to go beyond. If so, we are condemned by the so-called leaders of this branch of medicine. The term regulars only distinguishes our practice from irregulars, who, as we believe, are founded upon one dogma or principle. The regular profession is democratic even in the east, although Roosevelt is president, but more so in the south. And, therefore, we should have it known and understood and taught in our colleges that we are allowed the right to use any means we see fit for the relief of human suffering, and for the cure of diseases, let it come from whatever source it may. Take the homeopathist, and the foundation of his laws of practice of medicine, are two: Similia similibus curantur, or in English: Let like be treated by like and in infinitesimal doses. These are the cardinal bases for all and everything that is homeopathic in their works.

The electics, as you would presume from the word, "select from all systems" of medicine the best, and use them, let it be medicine, mechanical appliances or physical influence; but such is not the case, as they are committed to botanic and specific medicines, and that is their cardinal principle, vegetable and specific medicines.

Take the hypnotists and they propose physical influences alone. And the Christian Scientist suggests Christian physical influences as their basis. The osteopathists use massage or bone-rubbing as their sole basis of principle of practice.

Now all of these schools of medicine so advertise themselves, and we do not do them an injustice when we so

claim them. All of these schools indicate their doctrine by the names at the head of their catalogues. Now, in contrast with our profession, or regulars, you do not see the Atlanta College of Physicians and Surgeons or Augusta School of Medicine put down in their catalogues, Regulars, Allopaths, because they are not bound by any dogma, principle or idea, but to investigate from all sources, from all means and appliances, to secure relief for human suffering and prevent disease and degeneracy of human kind. Then, if this is the great mission of the noble profession of which this body constitutes a part, why not have it taught in our colleges in a more thorough manner. We are not narrow in thought or action, but have great big hearts which go out for the prevention and relief of human suffering, let it come from where it may. Should we teach this in our colleges and thereby spread it through the doctors over the country, the time would come when all "the little charters asked for would be a thing of the past."

The great thought would be handed to the world after it had been demonstrated as true, through the proper and reliable channels, and the *isms* which are gotten up for money-making and self-advertising would be no more. I want to commend our governor for his action in vetoing the bill in our legislature, not with the idea of stopping or suppressing any good that might come out of the doctrine of osteopathy, but to cut short advertising for money and selfish gain. Why not the regular profession accept anything which may redound for the good of humanity?

X-RAY TREATMENT OF ACNE.

By HENRY R. SLACK, Ph.M., M.D., Lagrange.

Probably there is no non-malignant disease that causes more anxiety and annoyance, to both patient and physician, than a stubborn case of acne.

Just as the ambitious youth approaches manhood and begins to stroke with pride a downy upper lip, he notices a blackhead, then a pimple, on his face. He thinks at first it is nothing, but when the number increases he is convinced that he needs a blood purifier. He purchases some patent nostrum recommended in the papers for such trouble, but to his chagrin, the medicine does no good, and in most cases makes him break out worse. He then consults a physician, and we all know how wearisome many of these cases become. If acne causes anxiety and heart burnings in the youth, how much greater the suffering endured by the lovely girl just about to graduate. The assurance that the disease will likely pass away in the course of a few years is to her cold comfort.

There is no need of my discussing before this body the etiology and pathology of acne, for the diagnosis of a well-marked case presents no difficulty. It is the treatment that so often disappoints us as well as our patients.

Knowing two effects produced by X-rays, that of checking pus formation and the atrophy produced in the follicles, suggested its use in treating this troublesome condition of the skin. The results I have obtained have been very gratifying, and are sufficiently encouraging to justify reporting my cases to this Association.

Case 1.—G. Y., aged eighteen, male, brunette, student. General health good except slight post-nasal catarrh. Has been troubled with acne for two years. Presented himself for treatment August 30, 1902. His forehead, cheeks and neck were covered with thirty-five large inflammatory papules and pustules. He was exposed to X-rays for eight minutes at nine inches, using a soft tube. He was given treatment alternate days to September 6, five in all, when he left for college. He then had only fourteen small papules. Did not see him again until Thanksgiving Day. He had received no further treatment and face was quite smooth.

Case 2.—J. M., aged nineteen, male, blond, manager telephone. General health always good, except had trouble with throat previous winter, and tonsils had been removed. Now has well-marked case of acne. Counted fifty-four papules on forehead, cheeks, nose and neck. Has had trouble for eighteen months. Gave him first treatment September 30, 1902, using soft tube for eight minutes at nine inches. Treated three times a week for four weeks. After first week number reduced to thirty, by the end of second week to sixteen, and by the end of third week to six. When I stopped treatment his face was perfectly smooth. I noticed in this case after each treatment face became very oily. He has remained free from pustules ever since.

Case 3.—Miss A. L. S., aged eighteen, blond, college girl. Mother had some trouble. General health good. Has had acne for eighteen months. Present attack worse than any ever had before. Has been taking patent medicines freely, and using soaps and salves in abundance, but the pustules are discharging freely and leaving ugly pits. March 27, 1903, gave first exposure to X-rays, using soft tube for seven minutes at six inches. Have given three treatments a week since. At this time, April 13, she has had eight exposures and only two pustules on right cheek.

Case 4.—Miss R. M., aged sixteen, brunette, college girl. Family history negative. General health good. Face been bumpy for sixteen months despite all treatment. March 27, 1903, had forty-four papules and pustules on forehead, cheeks and nose, besides numerous ones on neck and arms. Gave exposure March 27, and three times a week since, using soft tube eight minutes at six inches. After the fourth exposure all the pustules on the neck and arms were gone, though they were treated through the clothing, and the number on her face had reduced to sixteen; at this time, April 13, there are only six small papules on forehead, while cheeks and chin are free.

The only effect noticed from the X-rays was a slight hyperemia and pigmentation of the skin of about the same intensity as that produced by a week's stay at the seashore, and in case 2 the unctuous feeling of the surface.

I have used the X-rays successfully in treating two epitheliomas of the lower lids, one lower lip and in three carcinomas of the breast. Two of these were pronounced inoperable, in one the knife might have been used, but as her mother, after two operations, had died from cancer of the breast, she preferred trying X-rays. Have also gotten satisfactory results in two cases of tubercular ulcers. One case of recurrent carcinoma of the breast, after two opertions, was treated. The neoplasms reduced in size and pain was relieved, but not cured. One case of carcinoma of the lip apparently healed, but metastasis occurred on the gum and did not yield to treatment.

On the whole, my experience with X-rays has been very satisfactory. It is not a "cure-all," but is a valuable therapeutic agent that should always be tried before cases are given up as hopeless.

LITERATURE.

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A PRELIMINARY REPORT ON THE TREATMENT OF TABES WITH THE X-RAY.

By JOHN W. DANIEL, M.D., Savannah.

In presenting this paper I wish to emphasize the point that this is a preliminary report, and I might add, with provisional improvements. I do this advisedly, knowing the gravity of the disease under discussion and the hopelessness of treatment. In undertaking this treatment I have ignored the supposed causative agent in the majority of cases and have looked to the pathological condition, applying the remedy there, hoping, through the unknown metabolic changes which the X-ray brings about in other diseased conditions of the body, to accomplish something in this special disorder. I cannot as yet say anything positive as to the ultimate outcome of the experiment, but the results so far have been very encouraging. The results cannot be mere coincidents, for the two cases under treatment were in different stages of the disease; but both cases responded similarly, in that the last functions lost were the first to be restored.

I will not enter at all into a discussion of the pathology of the disease, for it would be a mere repetition of some text-book; nor will I theorize as to how the improved conditions are brought about, but will confine my paper to the clinical results as they have manifested themselves.

At present I have no fixed method of treatment, beyond the simple application of the X-ray, there being no fixed time for repetition of exposures, no definite length of exposure; the only thing to be governed by is the way the

patient responds, and avoidance of burns. In my opinion, the early diagnosis of tabes with the application of the X-ray offers great hopes for an arrest of the disease. In well-developed cases the ray will improve the condition and probably restore the lost functions.

I am taking this opportunity to call the attention of the profession to the possibilities of this method of treatment, with the hope that, by the persistent and early application of the remedy, we can arrest the disease if nothing more is accomplished. And, by the united efforts of those interested in the treatment, we can probably arrive at something definite as to what can be accomplished.

In presenting the clinical report of the cases treated, I will not word the report to suit myself, but have the report of each patient as prepared by himself. Both patients, being men of more than ordinary intelligence, and having consulted the best authorities in America, are thoroughly familiar with their conditions and symptoms, and are in a position to write a thorough history of their respective cases with changes in their condition as they arise.

Case 1.—Male, aged forty-two. Duration of disease six years. No history of syphilis.

At the time I began treatment for locomotor ataxia, June 1, 1902, under Dr. J. W. Daniel, I could walk with great difficulty, with the aid of my stick, and became greatly fatigued after walking two or three blocks. My gait was jerky, unsteady and very uncertain, and I could stand up only a short time, being exceedingly weak in the legs. In shaving I used a safety razor, and in a sitting posture. My weight was 144 pounds, and I used my buggy almost exclusively in getting around the city.

At the present writing I weigh 158 pounds; my gait is almost normal, being firm and steady. I walk anywhere without the aid of my stick, and quite recently I walked four miles with no apparent fatigue. For the past three

months I have stood while shaving and used an ordinary razor. My bladder, which had given me much annoyance from a failure to control it, is almost normal and troubles me very little if any. My arms, which became numb frequently at night, have become normal. My eyes have improved to the extent that I have dispensed with my reading-glasses. I notice no impairment of my vision, which had commenced to fail very perceptibly. My throat troubled me constantly. I was subject to paroxysms of coughing making it almost impossible to converse any length of time. I am now seldom troubled in this particular and notice decided improvement. My sexual organs have also shown the general benefit derived under the treatment, and I seem more vigorous. My nerve pains have seemed less frequent and not as severe, and are easily controlled. I sleep well, have a good appetite and my improved appearance has been generally noticed by my friends and considered wonderful.

Case 2.—Male, aged forty-seven. No syphilis. Duration of disease eight years.

COMPARATIVE STATEMENT AS TO CONDITION AT TIME OF COMMENCEMENT OF TREATMENT WITH X-RAY, JULY 1, 1902, TO FEBRUARY 15, 1903.

The Spine.—On July 1, 1902, there was but little sensation to touch. There has always been quick response to heat and cold. A mustard plaster applied to the spine from the first dorsal to the coccyx would have but little effect. There would be sensation of burn in only two or three small spots, and then not until after the application had been made for some time. The entire length of the spine, on either side of the column for about two inches in width, seemed to be dead and the muscles were hardening.

At this time the entire length of the spine is sensitive to the touch and, though not as acute as normal, it is greatly

improved. A mustard plaster will burn the entire length and quickly after application. The flesh has softened on either side of the spine and now feels about normal.

The Legs.—I found it very difficult to walk; stumbling and scarcely able to keep my equilibrium. I had to keep my eyes, for the most part, upon the ground immediately in front of me, and when in a crowd or in a confined space I found it almost impossible to proceed. There was a dead feeling above and below the knee. I suffered occasional pains in the extremities. I had to move my feet rapidly in order to keep erect. Now I find it easy to walk. My gait is not normal, but the improvement has been so marvelous as to prompt frequent congratulations from my friends. I can look forward and do not have to keep my eyes upon the ground except in crowded places. The numbness has not altogether left my legs, although there is more freedom of action and no inconvenience. While I cannot yet run, I can skip. I need not walk so rapidly to maintain equilibrium. I can walk slowly, using either long or short strides. I can stand still with much less difficulty, though there remains a rocking motion. I can walk a considerable distance or stand for hours without great inconvenience. My pains are more frequent and of greater intensity and, for the most part, are confined to and below the knees in both legs.

The Hands.—My left hand was of but little use. I could not depend upon its grasp. The third and fourth fingers had very little sensation of touch and were always in the way. There was occasional pain along the ulna. My right hand has not been as much affected, though the third and fourth fingers have not been normal. I could not write sentences, and at times could not write my name. My grasp was very weak and unreliable.

I can now use my left hand; its grasp has improved and, while not up to normal, is sufficient to be of assistance.

There is an improved condition as to sense of touch in the third and fourth fingers, and these do not get in the way so much. There is more frequent pain in the ulna. I can write more readily. While I cannot yet tabulate figures, I can make all of the numbers; the 8 and 3 give me most concern. I can place figures in a column but cannot use ruled spaces. There seems to be some obstruction in the way of confining myself to a given space or line. I can use the typewriter, using both hands alternately. My speed is not what it was formerly but is much more rapid than that of an ordinary penman. My arms have given me but little trouble, only an occasional pain along the ulna.

The Eyes.—I have ophthalmoplegia. I could hardly move either eye upward or downward, and not at all to the right or left. The muscles of accommodation for the lens seemed to act very slowly. The optic nerve of the right eye is atrophied.

I find I can now move the eyes upward and slightly downward, but as yet cannot move them to the right or left. The muscles of accommodation for the lenses act more promptly. At times I think I can discern more light around the edges of the optic nerve of the right eye.

Sphincter of the Bladder.—I could not control my bladder in the day or night-time. The sight or sound of running water or escaping steam was sure to cause a wetting. I could not retain the urine until I could reach a convenience. At night there was bed-wetting, every night and often two or three times during the night. I would not wake until after the trouble had passed.

I now find scarcely any difficulty in controlling the bladder during the daytime. Running water and escaping steam bring about a desire, but I can control it until a place of safety is reached. At night I rarely wet the bed, and then only when I fail to get up after waking. I wake in

time and, if not too sleepy, would find no inconvenience on this score. The fault is now mine and not the disease.

Sphincter Ani.—This was a serious affliction. For years I had been ostracized from society because of incontinence of the gases. These would escape in no uncertain tones whenever I was placed in a position where such an act would be disgraceful. There was nothing to be done in the exercise of the will, and artificial means had to be employed. First an enema of warm water to clear the rectum, and then an enema of strong alum water to hold the sphincter for a while. At times there would be a discharge of feces, but this did not occur often.

I find now that there is very little trouble from the sphincter. At times, when in company, I feel nervous and fear a mishap, but this is due more to dread than to disease. I believe there has been a complete change in this place.

Sexual Organs.—These have been practically dead for several years. The X-ray has so far done nothing for them.

In conclusion, I wish to impress on this convention that this report is on experimental work only and is not to be taken as a positive statement that the X-ray will cure tabes, but in the limited time that the work has been carried on the results will warrant a continuance of the research.

During the course of treatment the patients have had their backsets, as in other diseases of equal seriousness, but each time they rally, and the sum total of the rises and depressions is that the patients are better than under any other method of treatment.

CRIMINAL KINDNESS.

By RALPH M. THOMSON, A.B., M.D., Savannah.

It is not my purpose, in the presentation of this paper, to deal in "glittering generalities" nor pedantically to transgress the domain of technical phraseology. To the pathologist I shall leave the microscope and its field of usefulness; to the physiologist his investigation of given organs and their respective functions; to the chemist the result of his experimental researches, and to the theorist the consolation of his deductions. In so far as possible I shall disregard the tenets of therapy and endeavor to discuss, lucidly and concisely, the impressions culled from what might be termed advisedly a turbulent career. The subject is intensely practical, and, consequently, admits of a degree of originality which otherwise would be precluded by virtue of a limited professional existence; and, therefore, on this occasion I have presumed to ask your consideration of a few thoughts offered under the paradoxical caption "Criminal Kindness."

Nature gives much and demands much in return. Her laws are as fixed as the stars; her precepts as boundless as eternity. For given conditions certain rules are established, which, when ignorantly or contemptuously neglected, frequently result disastrously. Although the primitive age of man is past, and we live in an era of unprecedented enlightenment, of scientific attainment and scholasticism, we are at best children of nature still, and covetous of her favors. She bestows the same solicitude on the violet close to its mother soil as on the majestic pine which, tow-

ering above its fellows, bids defiance to the storms of years. The plant thrives in proportion to the degree in which her mandates are obeyed. Deprived of her sunlight, her moisture, her earth, it dies. Plucked from its parent stem the rose withers and is forgotten, while the thorn-burdened tree that gave it birth lives on to bear again. The mountains, the seas, the rocks, the rugged hills, the birds, the beasts, the flowers, things animate and inanimate, respond with one accord to nature's will, while man, and man alone, seeks to circumscribe her power.

It is a well-known fact that in early childhood the organs have not attained their anatomical growth nor reached a degree of physiological perfection. Only with the lapse of time and the advent of maturity can this state of development be expected. A child's stomach does not receive its full functioning power in infancy. Nature does not ask of the child what is required of the man. Her laws are just, simple and wise; her reward rich, full and generous; her penalty keen, certain and severe. Regret and remorse follow the violation of her injunctions. Tear-stained graves testify to the infringement of her rights, and broken hearts, when too late, mourn at their inexorable folly. Many little forms that might have been saved to bless their country and grace the home sleep on forever through the indifference or criminal kindness of a too indulgent parent. Statistics justify the assertion that the mortality among young children is more directly attributable to some derangement of the digestive system, induced by improper feeding or the indiscriminate use of solid food, than to any other specific ailment. To relax vigilance in feeding after the first year is a mistake as unpardonable as it is frequently fatal. The ideas of the laity regarding the digestive ability of a child who has outgrown an exclusive milk diet are erroneous. In their desire to satisfy its craving, to pacify its anger, or manifest their devotion, they

become irrational, and condone in themselves what would readily be condemned in others. How true that the strongest man, the most courageous, is often weaker than his child! And its mother, brilliant, perhaps, in intellect, endowed with—

"All that beauty, all that wealth e'er gave,"

honored for her wisdom, toasted for her virtues and worshiped for her sentiment, becomes, alas, the menial subject of a prattling babe. What constitutes courage? What indicates strength? Of what value are wisdom, intellect and virtue divested of those elements which most adorn moral stamina and character? It is infinitely better to say "no" when right than "yes" when wrong.

Holt, in his excellent work on the "Diseases of Infancy and Childhood," says unequivocally: "The majority of infants are given solid food too early and in too large quantities. Most of the attacks of indigestion during the second year are directly traceable to such gross dietetic errors." Again, he asseverates that the diet of a healthy child at this period of development should consist of milk, some farinaceous food, stale bread after the child has most of its teeth, a small amount of animal food, as beef juice or scraped beef, poached or soft-boiled eggs, orange juice, baked apples without sugar, and, occasionally, two or three stewed prunes. All other food may advantageously be omitted, and water allowed only between meals. During the second year the child requires to be fed about five times daily, and from the third to the sixth, four meals will suffice. The diet, of course, should be given at regular intervals. These articles, briefly enumerated, constitute, all things being equal, the essential factors for the proper maintenance and sustenance of a healthy child of this age. An abundance of sunshine, fresh air and exercise, most desirable auxiliary elements, are accessories too fre-

quently denied those surrounded by an atmosphere of city life. In striking contrast, the point can be illustrated by casual reference to an instance in which a mother—born and reared in affluence, intelligent and otherwise superior—to hush the cry of her baby of fourteen months, gave it shrimp, and wrung her hands in pathetic anguish at the convulsions that followed. Another, a manly little fellow, bright-eyed, chubby and the picture of health—his mother's joy, his father's hope and pride, armed cap-a-pie with the necessary appurtenances—bacon and peanut candy—to wage a merciless conflict on its innocent victim, has passed to the great beyond, while the warning of impending danger, so often given its parents, rises in spectral form to taunt their aching hearts. Within the recesses of a happy home a little girl, a child of twenty-two months, is playing, unconscious of harm and oblivious of self, with an older sister, a tot of four. Suddenly, with a cry of pain and an anxious expression on her little face, she reels and falls. In haste the doctor is summoned, and, on responding, finds a deeply cyanosed condition, a rectal temperature of 104 degrees, a pulse of 165, a respiration of 60 and decidedly stridulous. The sufferer is conscious and vomits intermittently. An enema removes three or four raisins from the lower bowel; and the mother confesses to have added a slice of pound cake to these indigestible factors. Four long and seemingly interminable days drag out their uneasy existence before anxiety vanishes from her brow and hope again sparkles within her eyes; and because, although forewarned, she had not the courage to deny her baby's plea. And mine is but the experience of us all. You, perhaps, may picture more vividly and in language more appalling than any my lips might frame the disaster that has followed in the footsteps of childhood and indelibly stamped its stain upon the hearts of those who, alas,

through mistaken kindness, have "loved not wisely but too well."

The indiscriminate feeding of children is a crime. Its sequel is a stricken conscience. Generally speaking, it is as manifest among the rich as the poor, but with a qualifying difference dependent on their respective social stations. The children of the poor, proclaimed often with contempt, are unwittingly blessed in their poverty. Limited means compel the purchase of wholesome and more nutritious food, and seldom can they indulge their craving for fancy dishes or candied confections. The offspring of a Crœsus would esteem such provisions too coarse for his fastidious stomach, and too degrading for his elevated position. An indulgent parent, allowing sentiment to overcome duty, makes of his paternity a misdemeanor, and humors the whims of an irrational and immature mind. This, in a measure, will account for the discrepancy so often apparent in children of high and low degree. The fact that one child can eat certain articles of diet with evident impunity does not argue that another can do likewise. It would be as logical to contend that because it rained today it will not to-morrow. Because a banana is eaten six days in the week, with no ill effect, is not conclusive argument that the seventh will pass in safety. No two epochs of time are similar. Conditions may change in a moment. Nature alters cases to conform to her requirements. The question is not so much what to give as what not to give, and when and how and where. Sausage, pork, liver, fried vegetables, hot bread, green corn, griddle cakes, nuts, candies, pies, preserves, salads, coffee, dried and canned fruit, and all fruits out of season, particularly during the summer months, may be restricted with advantage up to the seventh year. It is easier to create trouble than to throttle it once it has commenced. Abstinence alone can grant absolution. Skepticism is a traitor that leads to repen-

tance. To err may be human, but discretion is synonymous with wisdom.

Mastication is imperfect up to the seventh year, and, consequently, digestion. The two coexist and cannot be separated. The child, therefore, should be taught to eat slowly and chew thoroughly. When disinclined it is unwise to urge children to eat; and never should they be forced. To tempt the appetite with indigestible articles when ordinary simple food is refused is as unwarranted as it is unpardonable. To habitually offer food between meals is the part of folly; and in all cases of temporary indisposition, no matter of what nature, and during periods of excessive heat in summer, the amount of solid food should be reduced and more water given. Each child is a law unto himself, each parent an officer thereof. Our faculties are divine; the use we make of them indicates character. Character means strength and strength manhood. The strongest man, therefore, is he in whom these two elements are so closely blended that, standing for the best that is in him, he will not answer "yes" when his heart demands a negation. And that parent most loves his child who, in the crucial test, waiving sentiment and turning a deaf ear to the plaintiveness of its request, does what he *knows* to be best for its eternal good.

In conclusion, in behalf of the little ones, too young to speak for themselves, too faithful to appreciate, if they could, their jeopardy, too innocent to feel the indifference of an uncharitable world, let me admonish those to whom they have been given to stand up like men, to learn like men that weakness, to the extent of gratifying their childish prayers for unwholesome, innutritious and indigestible food, is, and can be, only a mistaken and criminal kindness.

TREATMENT OF ACUTE INSANITY.

By M. L. PERRY, M.D., Milledgeville.

In insanity the most important period is that covering the incipiency and earliest stages of the established disease. It is at this time, before the occurrence of destructive changes in the cortex, that we find the greatest response to treatment and get the most satisfactory recoveries. In fact, the prognosis depends largely upon the management of the case during this period. In the treatment of insanity the proverbial ounce of prevention is usually worth many pounds of cure.

Asylum statistics differ somewhat as to the average duration of mental disease in those patients discharged restored, but they all agree that the majority of recoveries occur within a few months from the beginning of the morbid process. And these statistics are to a certain extent misleading, for in many cases reported as cured from institutions there has occurred a slight mental enfeeblement, so that the patients, while able to take care of themselves and to return to their former occupations, have their mental faculties somewhat obtunded and unstable.

Authorities all lay specific stress upon the importance of judicious treatment in the very early stages of the disease. In most instances the patient during this period of special amenability to treatment has not come under the care of the alienist, but is still in the hands of the family physician. The subject thus is one of as

much, if not more, interest to the general practitioner than to the specialist.

Every case of acute insanity will show upon examination that the patient is suffering from one or more of the following conditions, viz., a lack of nourishment, a loss of sleep, and faulty elimination. In most instances there is a combination of the three. The first, a lack of nourishment, is usually, but not always, the result of a failure on the part of the patient to take into the system a sufficient amount of food. Sometimes a sufficient quantity is taken, but either the quality is bad or the assimilation of the patient is so poor that, while he eats a plenty, he really gets little nourishment from it. The usual history of the case, however, is that there is a loss of appetite, or a failure to eat from indifference, excitement or delusion. In the latter case there may be, and often is, an absolute refusal to take food of any kind for days or even weeks and months. Under the influence of powerful delusions a patient will starve rather than take a single mouthful of food. But it matters not what the basis of the trouble is, it is one of the first indications in the treatment of all acute insanities to see that the patient is thoroughly nourished. The importance of this matter appears to be very generally underestimated, and it is certainly too often overlooked or neglected. Mercier, in his recently published text-book, says: "In a large proportion of the cases of acute insanity that we have to treat a greater or less degree of starvation has been one of the factors of its production, and copious feeding is one of the most important modes of treatment." The means adopted to gain this end will necessarily depend upon the cause of the disorder. If malassimilation is the fault stomachics and bitter tonics should be given, and the general tone of the stomach improved.

In the meantime a bland, easily digested and highly nutritious diet should be prescribed. If the patient refuses to eat, or cannot be induced to take a sufficient quantity, then forced feeding must be resorted to. This is best done by means of a small, soft rubber tube passed through the nares, and long enough to reach to the stomach. In an emergency, however, a soft rubber catheter and a small funnel will suffice. The only danger in forced feeding is the passing of the tube into the larynx. This is always to be borne in mind when feeding a patient in a state of profound stupor, for in such cases the tube may be passed well into the trachea without eliciting any sensory response. Either plain milk or a special feeding mixture can be used, and as much as a pint and a half should be given two or three times a day. Plain milk is all that is needed if the patient has to be fed for only a short time, but if the feeding has to be long continued it is better to use a mixture made by adding to a pint of milk a well-beaten egg, a dessertspoonful of sugar, and a little salt. On such a mixture the patient can be kept well nourished for months.

Insomnia is one of the most constant symptoms of acute insanity. It is frequently the first to be observed, and is usually present for some time before the disease is fairly established. Continued insomnia in an individual who is naturally predisposed to insanity, or who is undergoing any mental stress, should always be viewed with apprehension, and promptly dealt with. The selection of a hypnotic, and the dose to be given, will, of course, depend largely upon the individual case. But it is well to remember that the insane require much larger doses of hypnotics than do the sane. A very frequent mistake is made in attempting to relieve insomnia by the hypodermic use of morphine. Opium

and morphine in the nervous and acutely insane very rarely do any good, and almost always do positive harm. If the case is one accompanied by excitement, it not only fails to produce sleep, but invariably stimulates the mental activity of the patient. And by giving morphine in the premonitory stages we run the extreme risk of fastening upon the patient the drug habit, which is as bad as the disease we are attempting to prevent. Opium in all cases locks up the secretions and deranges the system to such an extent that it should never be resorted to as a hypnotic. If there be violent excito-motor symptoms present good results may be obtained by the hypodermic administration of 1-50 gr. of hyoscine. This is almost a necessary drug in the treatment of violently excited patients when kept at home. The three most valuable drugs as hypnotics which we now have are trional, sulfonal, and paraldehyde. Of the three trional is the one best suited to most cases. It is more prompt in its effect than sulfonal, and I have never seen hematoporphyrin in the urine following its continued use, as sometimes occurs when the latter drug is used. Trional in 20–30 grain doses will in most cases be followed by several hours' sound and refreshing sleep.

A combination of trional and sulfonal, 15 grains each, is frequently found to be especially efficacious, the sulfonal continuing the sleep for a longer period. Paraldehyde is a very valuable hypnotic in patients who have been addicted to alcohol, and it also frequently acts especially well in states of mental depression. It must be given in doses of 1–2 drams to get results. The only objectionable feature which it has is its extremely bad taste and smell, but this can be to a great extent overcome by giving it in equal parts of syrup of orange and whisky. Paraldehyde has a distinct advantage over most other hypnotics in that it is

a heart stimulant, and can thus be given in full doses when many other drugs of this class could not be used.

There are certain patients who do not respond to even vigorous medication, and in whom it is almost impossible to produce sleep by the use of drugs. They are cases of extreme nervousness in whom the skin is dry, harsh, and apparently hyperesthetic. They will roll and toss themselves about, and appear to be irritated by everything that touches them, even the bed-clothing. In these cases there is nothing which acts so well as the pack. The patient is stripped and wrapped in sheets wet in water at or about the body temperature. They are allowed to remain thus from thirty minutes to an hour or longer, and the effect is often astonishing. Not infrequently a patient who has been restless and irritable for days will, under the influence of the tepid pack, become quiet and go to sleep in a few minutes. The pack appears to act by relieving the cutaneous irritability, which is sometimes so pronounced as to defeat all efforts to produce sleep by the use of drugs alone. Each case should be studied individually, but by a judicious use of the above remedies, either alone or in combination, a sufficient amount of sleep can usually be obtained.

In recent years much has been heard about the role of autointoxication in the causation of insanity. Whether we indorse this theory or not, a study of the function of elimination will disclose facts tending to support it. Faulty elimination is present in practically all acute cases. Constipation is the rule, and it is often extreme. The amount of indican in the urine may be taken as an index to the amount of absorption of the poisons of putrefaction from the alimentary canal. A very high percentage of cases among the acutely insane will show a large amount of indican in the urine. A systematic examination of the urine has been made of

all patients received at the State Sanitarium for several years. In these examinations indican in an abnormal amount has been found to be present in about 60 per-cent. of cases. A study of the urine shows further a marked decrease in the eliminating function of the kidneys in acute psychoses. An estimation of the total amount of solids eliminated by the kidneys will show that in practically every acute case it is below the normal. It not infrequently falls to one fourth of what it should be. Metabolism continues the same or even with increased activity, and only one fourth of the waste products of the system is thrown off. The retained substances must necessarily exercise a powerful influence upon the mental state of the patient, since it is a well-established fact that the waste products eliminated by the kidneys are virulent nerve poisons. An analysis of a single specimen of urine is often misleading, as the specific gravity is usually high in these cases, and it is only after the examination of the whole amount of urine passed in twenty-four hours that a reliable conclusion can be reached. The treatment should of course be directed to the emunctories and an effort be made to increase their activity. The bowels should be thoroughly evacuated and kept regular. The importance of this procedure can hardly be overestimated. The change in the mental state following a free purgation is sometimes astonishing. In the early treatment of insanity there is no other line of medication so invariably indicated, nor is there one productive of better results. In the selection of a diuretic considerable care is to be observed. Stimulating or irritating diuretics should never be used, as the danger of nephritis is especially great in these cases. It has been pointed out by Bouchard and others that potassium plays one of the most important parts in the poisoning due to

renal insufficiency. Therefore, the potassium salts are positively contraindicated. The infusion of digitalis is probably the best diuretic to use in such conditions. It should be given freely, and its action may be enhanced by small doses of calomel, and the frequent administration of large draughts of water.

The question of hospital *vs.* home treatment naturally comes up early in the course of the disease, and the advice of the family physician is sought. The circumstances surrounding the patient and the nature of the case have some bearing upon the solution of the question of course, but, as a rule, the quicker a patient suffering from any form of mental alienation is placed in an institution especially prepared for the treatment of such cases the better. The relatives very often think otherwise, and insist upon keeping the patient at home as long as possible It is not infrequently the case that the home influence and that tendency of solicitous friends and relatives to humor every whim and impulse of the patient are exactly what is not wanted. There is a possibility of every acutely insane person doing some violence to himself, either accidental or with suicidal intent; the probability of it, however, is materially lessened by placing him in an institution. In the matter of equipment, care and nursing the advantage is certainly with the hospital. The family physician by his counsel and advice can do much to overcome that unfortunate but wide-spread distrust of insane hospitals, and that antipathy which causes them to be looked upon by many as a place of last resort. By doing this he will prevent many curable cases from being kept at home by well-meaning but misguided relatives until they drift into chronic and hopeless dementia.

UNCINARIASIS (ANKYLOSTOMIASIS); ITS FREQUENCY AND IMPORTANCE IN THE SOUTHERN STATES.

By H. F. HARRIS, M.D., Atlanta.

Uncinariasis, or hookworm disease, has long been known as an affection that is occasionally encountered in the United States, but its great frequency and importance is just dawning upon us. In the excellent monograph of Mosler and Peiper on animal parasites in Nothnagel's "Special Pathology and Therapy" the statement is made that instances of this disease were reported by Duncan in Alabama and Lyell in Georgia in 1849. I regret that I have been unable to verify these references, though there can be no reasonable doubt as to their authenticity. Within recent times quite a number of cases of this disease have been reported from the United States, though many of the patients were foreigners, and the malady was unquestionably contracted in the old world. Instances of this kind are of comparatively little interest for the reason that they were not acquired in America, and that in most cases the sufferers lived in the northern part of our country, and the conditions there are rarely such as to permit the distribution of the disease. Interest in this subject was greatly added to by the discovery of Stiles about a year ago that there is a hookworm that is a distinct American species, and to which this writer has given the name Uncinaria americana. This parasite greatly resembles the one found in the old world, and

could easily be mistaken for it, but it exhibits differences that unmistakably stamp it as a new species, and its discovery would point to the probability that the disease is widely disseminated in America, especially in the southern portion of the United States. In Georgia this matter seems to have been entirely dropped after Lyell's work upon the subject, no case apparently having been diagnosed during life until the one that I reported at the last meeting of this Association. At the time that I read my paper I ventured the prediction that this disease was much more common than was generally supposed, but I confess that I had no suspicion of the frightful ravages that it is making among us.

I spent the summer of last year in the mountainous region of north Georgia, and was much astonished to find that this disease affected a large percentage of the population in many districts, the unfortunate sufferers being generally regarded as dirt-eaters. In September I made a trip through southern Georgia and northern Florida for the purpose of studying malaria, and while there I discovered the fact that almost all instances of profound anemia were due to the uncinaria, and not, as has been heretofore generally assumed, to the malarial parasite. It is a rather curious fact, for which I will later give a possible explanation, that this hookworm disease does not appear to exist to any extent in middle Georgia, and it is further noteworthy that the disease is preeminently one of the country districts. Since beginning my work on this subject I have seen eighteen instances of the disease, and have made the diagnosis in twelve other cases from this State, Alabama and Florida, the feces having been sent to me by various physicians from the localities named. In this connection I wish especially to thank Dr. W. P. Lovvorn, of Cecil, Ga., and Dr. V. O. Harvard, of Arabi, Ga., for their interest

and assistance in obtaining feces for examination. Dr. E. D. Bondurant, of Mobile, Ala., who kindly permits me to quote him, informs me in a recent letter that he has within the last year diagnosed seventy-five instances of this malady.

Natural History of the Uncinaria Americana.—This parasite belongs to the order of nematodes or round worms, family strongylidæ, subfamily strongylinæ, and genus uncinaria. The worm is a comparatively small one, the female being always larger than the male. The former varies in length from 11–14.5mm., the average being 12.87; at their thickest portions they are from 0.410–0.600mm., with an average of 0.509mm. The male is from 8–10mm. in length, the average of a large number of measurements being 8.8mm.; at their widest portions they are from 0.300–0.390mm., with a mean of 0.343mm. The worms taper toward either end, and at their cephalic extremities both sexes have about the same diameter, this varying from 0.088–0.132mm. The tail of the female terminates in a pointed extremity, while that of the male ends in an expanded bursa, which at its free end has a considerably greater diameter than the body of the parasite. There are still other peculiarities of the American hookworm that serve to indicate its specific characteristics, but a more accurate description would scarcely be in place on this occasion. I would refer those who wish to study the more minute anatomy of this parasite to the description given by Stiles in his paper last year, which has already been referred to.

The eggs of this hookworm appear to be somewhat larger than those of the old world species, as I have found from a large number of measurements that they vary in length from 57.5 to 80m., and from 35–52.5m. in diameter, the average being 66.52m. and 42.53m., re-

spectively. The eggs, as encountered in the feces, are oval in shape and covered externally by an extremely thin shell which is perfectly transparent. The solid contents of the eggs do not appear usually to be in contact with the capsule, but there intervenes between the two a clear space that is doubtless filled with fluids. When the eggs are perfectly fresh some of them contain a single granular body within their centers, within which there is a nucleus; in most instances, however, we do not find a solitary body of this kind, but, as a result of rapid multiplication, there are a number of these cell-like structures. At the proper temperature and in the presence of moisture the granular bodies within the eggs rapidly increase in number, and in the course of from twenty-four to thirty-six hours completely fill the egg cavity; shortly following this the embryo takes form, and we find in the place of the preexisting structures within the egg a minute snakelike worm which exhibits more or less active movement. Quickly following this the capsule of the egg bursts, and the embryo is liberated, coming out tail first in all instances where I have had an opportunity of observing the process. When the embryo emerges from the egg it has a length of from 350–400m., but in the course of a day or so grows in length to from 600–700m., with diameters at their widest portion of from 25–30m. The worm at this stage possesses the power of very active movement, progressing either forward or backward with considerable rapidity and apparently equal ease. Externally it is covered by a transparent chitinous membrane about 5m. in thickness, through which the comparatively simple structure of the internal portion of the parasite may be observed. In a few days after the larva is hatched the body recedes from its outer covering, and a second membrane is formed over the external surface of the worm. Between

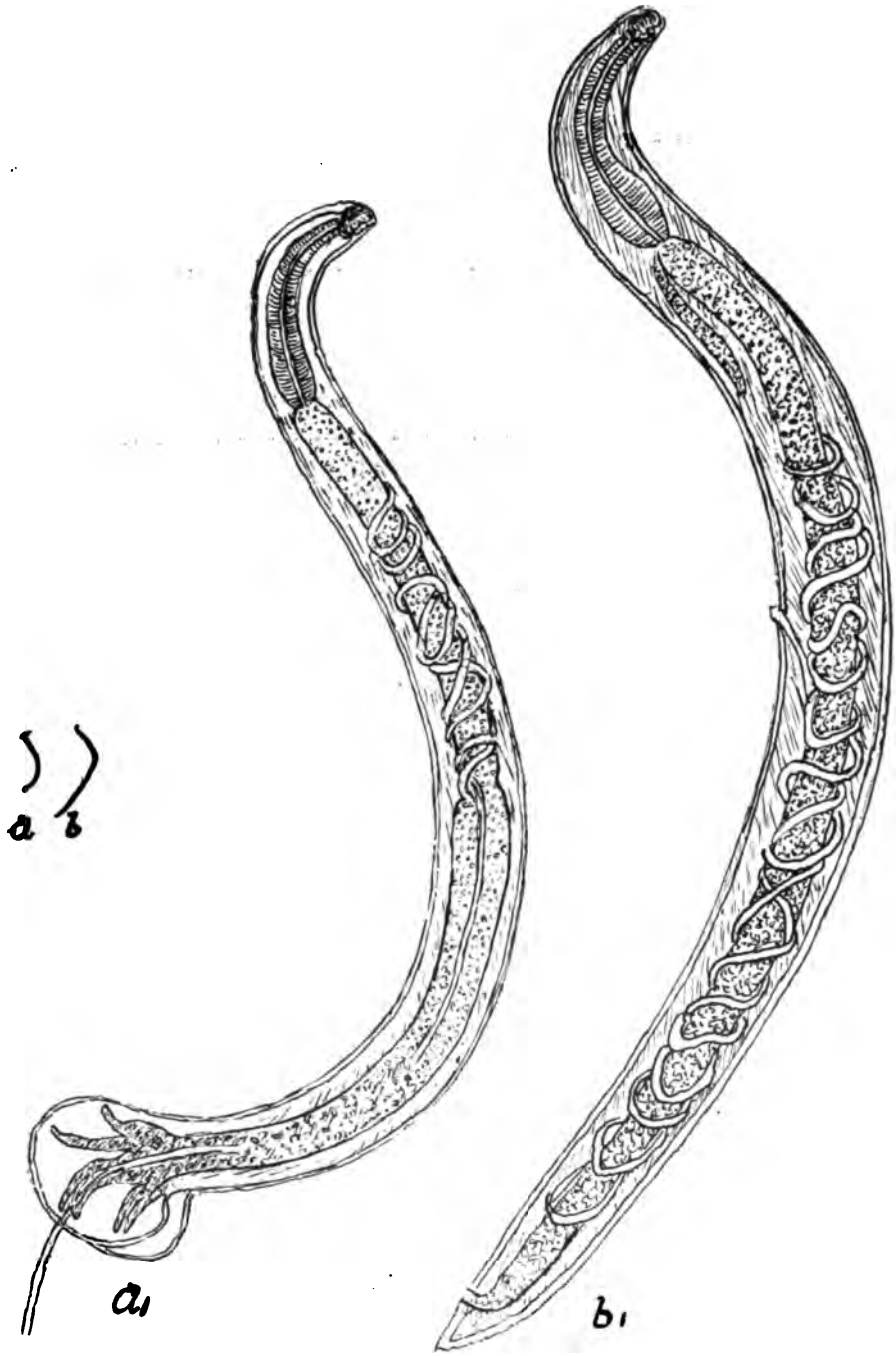

FIG 1. a, Male uncinaria, natural size; a1, male uncinaria, greatly magnified; b, female uncinaria, natural size; b1, female uncinaria, greatly magnified.

the outer covering and the second one formed internal to it there is a clear space within which the worm moves. The entire body is still capable of active movement, though this is never so active as before. This is probably the infective stage of the parasite. At a later date many of the worms lose their outer covering, but whether a second one is formed I cannot say with certainty, though it is stated by Loos that this occurs in the old world species. Like the eggs, the larvæ die very quickly when dried.

Before quitting this part of the subject it may be as well to call attention to the conditions under which the embryo develop within the egg, as this is extremely important in connection with the dissemination of the parasites. In order for the eggs to hatch the temperature must be comparatively high, the development scarcely occurring at all below 70 F. From a number of experiments it appears to me probable that hatching goes on most rapidly between 80 F. and 90 F. In addition to a comparatively high temperature it is necessary that the eggs be moist, they being invariably killed as a result of desiccation; it is, however, true that they will not undergo development if they be covered with water, probably for the reason that oxygen is excluded. The medium in which the eggs hatch best is probably that in which they naturally occur—the feces—though this likewise takes place readily when they are placed in finely powdered sand, or, as has been suggested, in pulverized animal charcoal, both being, of course, properly moistened. The latter substance is extremely favorable for growing the larvæ for laboratory work inasmuch as the disagreeable odors that arise from the feces are very quickly destroyed. From the foregoing it is seen that the eggs, as we would of course expect, are deposited under conditions that most favor their develop-

ment, it being assumed that the temperature is favorable. It is, however, true that were the feces allowed to lie undisturbed only the eggs would hatch upon the outer surface where oxygen is present, but it is extremely interesting to note that very quickly following the

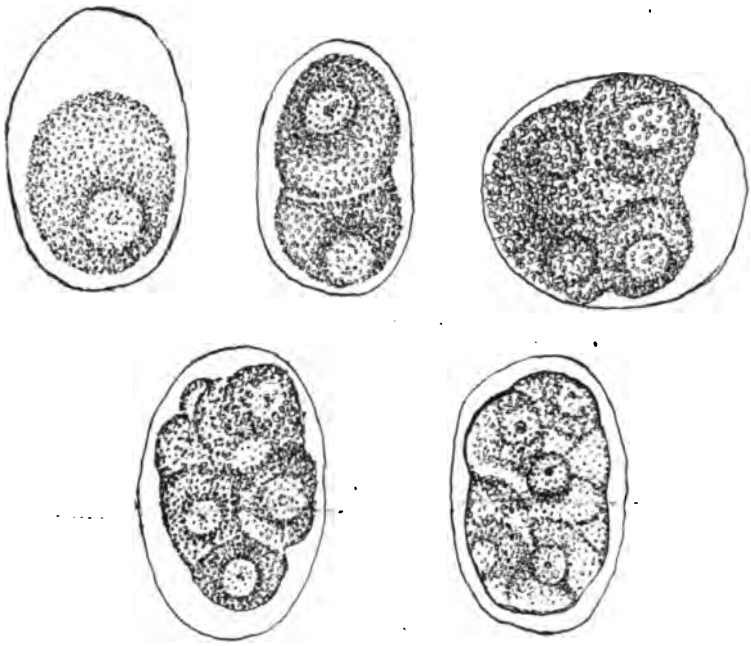

FIG. 2. Eggs of the uncinaria, the contents showing varying stages of development. Zeiss E, Oc. 4.

deposition of the stools eggs of flies are layed upon the feces from which larval forms of these insects are rapidly developed, and they burrow into the masses and break them up to a considerable extent, and in this way oxygen is brought in contact with the ova. It is thus seen that there can be no doubt that flies and other insects that feed upon the feces greatly assist in the spread

of this disease. It is of some practical interest to note that the eggs are killed by a freezing temperature, and that if from any cause hatching be prevented they undergo fatty changes and perish in a month or six weeks.

After the larvæ are matured they find their way into the small intestine of the human being, attach themselves to the mucous surface, and growing rapidly at the expiration of a few weeks develop into the adult worms. As to how quickly this occurs we are in ignorance so far as the American species is concerned, but the time probably does not materially differ from that which is necessary for a similar process to take place in the old world parasite, and in this case it is known that about six weeks are required. As soon as the worms complete their growth copulation takes place, and the females begin to lay enormous numbers of eggs, after which the cycle of development is begun over again.

Since it is necessarily true that the larvæ of this parasite in some way reach the human body from the feces in which they are matured, very early in my studies of the malady produced by them I investigated carefully the different ways by which this result might be brought about, and was particularly struck with the fact that the disease occurs preeminently among the poor, and in an overwhelming majority of instances where the matter could be investigated it was found that the sufferers and their families did not use privies, the feces being deposited in and around stables, and oftentimes in the yards. I am much inclined to the opinion that the comparative immunity of the middle Georgia districts from this disease is due to the fact that this habit is not so general, and that almost everywhere water-closets are in use.

It is a further fact of importance that the sufferers

are in a large majority of instances children who, especially during the summer months, go barefooted. Now there seems to be but two probable explanations of the manner in which the uncinaria larvæ enter the human body, the one—which undoubtedly sometimes occurs—is that the young parasites are swallowed with the food or drink, and the other, which has not as yet been conclusively shown to be true, is that the larvæ penetrate through the skin, and passing through the body, ultimately enter the alimentary canal. If the former were the usual method of infection adults ought to be quite as often affected as are children, while, as has just been stated, this is not the case. If we accept the latter explanation, we at once understand the relative frequency of the disease under the circumstances referred to, namely, the constant exposure of the skin of the hands and feet of the children to filth swarming with the uncinaria larvæ. Of course, it is true that the young parasites might be washed by the rains into wells, but it is a fact that as soon as they are placed in water they immediately begin to sink, and in a short time rest on or near the bottom of the vessel in which the fluid is contained, and there is no reasonable doubt that this would occur under the circumstances named. In north Georgia where the disease is very prevalent, the inhabitants drink spring water exclusively, and it seems highly probable that if the larvæ were washed into the springs they would be almost immediately carried away.

Great interest was excited some years ago by the discovery of Loos that the larvæ of these parasites may penetrate the skin of the human being, and although I have myself failed to confirm his observations after a number of experiments, I still feel inclined to the belief that he is correct. It should, however,

be stated that this view has recently been combated by Pieri working under the direction of Grassi. This writer, Grassi, and another student of the latter, Noe, placed upon the surfaces of their bodies fluids containing larvæ of the old world parasite, and two and a half months latter Pieri found eggs of the worms in his feces, but the other experimenters remained free from any evidences of the presence of the worms in their intestines. Notwithstanding that in one out of three instances the experiment apparently proved successful, these investigators concluded that infection in this case probably occurred in some other way, and that the view of Loos is incorrect. In connection with this subject the observations of Bentley are extremely interesting; he showed that among the coolies of India uncinariasis is almost universal, and that ground-itch is so severe and common among them that it has proven a serious hindrance to farming operations. Bentley conceived the idea that the latter condition was due to the penetration into the skin of those so affected of the larval forms of the uncinaria, and succeeded in inducing a disease in every way similar by applying to the bodies of some of the natives earth containing hookworm larvæ. It is thus seen that it seems a possibility that two diseases that hitherto we have not dreamed had any connection with each other may be due in reality to the same cause acting in different portions of the body. In support also of this view it may be mentioned that a parasite of the horse, the strongylus armatus, has been shown to penetrate into the intestines of the these animals through a similar circuitous route.

Pathologic Anatomy and Symptomatology.—The morbid alterations that occur in this disease are so intimately associated with the symptoms that I consider them together in order to avoid much useless repetition.

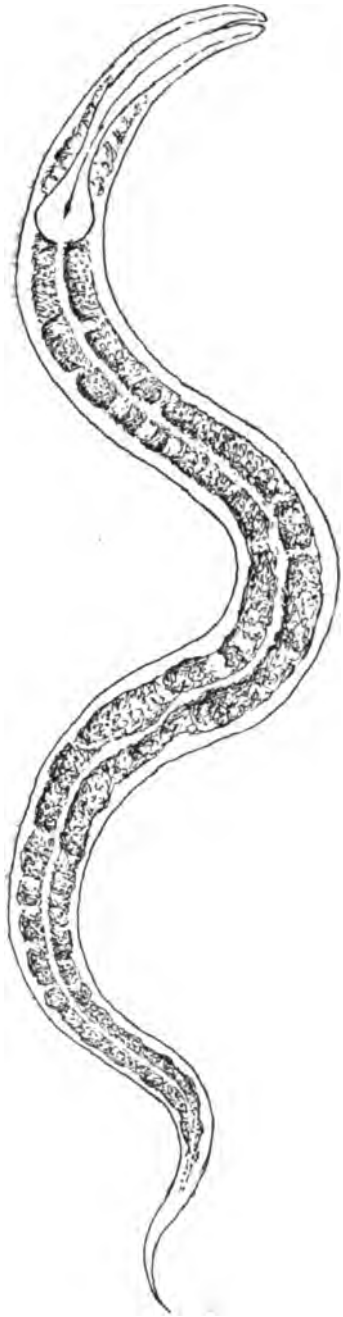

FIG. 3. Uncinaria larva, three days old. Zeiss E, Oc. 4.

The larvæ of the parasite when brought in contact with the skin of the human being unquestionably, as Loos has shown, gives rise to inflammatory phenomena, and while it cannot be asserted with certainty, we have strong reasons for believing that the disease known as ground-itch in English-speaking countries, and panighao in India, is induced in this way. The first manifestations then that the uncinaria probably give rise to is an acute inflammatory condition of the surfaces of the feet, and, in rare instances, of the hands. This condition may become so severe that walking is painful, and labor requiring this impossible. Following this, the exact period being as yet unknown, the patient begins to suffer from the presence of the parasites in the intestinal tract. We are likewise in ignorance as to the first clinical manifestations that occur in this connection, but we find when the sufferer falls into our hands that he is invariably pale and obviously decidedly anemic. He may complain more or less of digestive disturbances, and he feels a strong disinclination to labor of any kind. The patient oftentimes complains of neuralgic pains, particularly in the head. The appetite may be normal, but more or less anorexia is generally present. It is a curious fact, which appears to be rather characteristic of the disease in the new world, that the patient gets much better in the winter, and in many cases they assert they are perfectly well, but as spring advances their strength rapidly declines, and by the beginning of summer in severe cases they are in a really pitiable condition. On physical examination it is found that in children growth has taken place with extreme slowness from the very beginning of the disease, it being common to find young people from fifteen to twenty years of age who appear to be from eight to twelve years old. Not only

do they present the appearance of youth much greater than is in reality the case, but the growth of the mind and of the various parts of the body is much retarded. This is particularly noticeable in the total want or only partial development of the beard in the male sex. The skin is found to be thin, wrinkled, and extremely pale, and the mucous membranes exhibit even a greater degree of want of color. The body weight may be somewhat decreased, but as in many other profound anemias emaciation is never pronounced. In severe cases the lower extremities and face are oftentimes found to be swollen, there being occasionally a very pronounced dropsy present. In women the menses are, as a rule, suppressed in severe cases, though this does not prevent the bearing of children. Physical examination of the lungs shows nothing abnormal as a rule, though pleurisy may complicate the disease occasionally. The heart is found in its normal position, and it does not exhibit any enlargement, but we find on auscultation that almost invariably soft, blowing murmurs may be heard in the mitral and pulmonary areas; in the tricuspid region murmurs are likewise sometimes encountered, all being evidently hemic. A venous hum is quite constantly heard over the right jugular. No alterations are found clinically in either the spleen or liver, but it is probable that the former organ would show fatty changes on microscopic examination. Occasionally on deep pressure slight sensitiveness is elicited in the abdominal region, but I am not inclined to regard this as having a direct connection with the presence of the parasites in the intestine, for notwithstanding the fact that the worms fix themselves to the mucous surface of the gut, the lesions are never severe enough to give rise to external manifestations. In Europe it is said that patechial spots frequently sur-

round the point where worms are attached to the gut, but this I have never observed; it is not unlikely that owing to differences in the mouths of the two species that the old world hookworm produces locally more severe lesions than its American representative. European writers assert that the parasites frequently change their location, each time leaving an open wound where they were formally attached, and that as a result considerable hemorrhages sometimes occur. Under such circumstances the blood cells do not appear as such in the feces, but the pigment of these bodies persists, and may lend a dark, reddish-brown color to the stools. It is of interest to note that on investigation the parasites are occasionally found lying beneath the mucous surface of the intestine in a small cavity containing blood. It seems probable that the worms found in such situations have not penetrated through the mucosa from the lumen of the intestine, as has heretofore been assumed, but that they have been received into the body through the skin, and have failed to pass into the inside of the gut. The state of the bowels varies greatly in this disease; constipation may exist, a tendency to diarrhea may be present, or the stools may be normal in frequency and in consistence. On microscopic examination the feces present no appearance from which the existence of the disease could be inferred, but if a small particle be thoroughly mixed with a drop of water and placed under a microscope of moderate magnifying power, you will rarely ever fail to detect the eggs of the parasite. In cases where there are but few worms the number of eggs may be so small that it will be necessary to make several examimations, but owing to the fact that the ova are very thoroughly mixed with the feces this is rarely necessary. In addition to the eggs Charcot-Leyden crystals are generally present,

but I have searched in vain for them in a number of instances. This is rather curious since it is stated by European authorities that in the stools of those affected with this malady these bodies are invariably found. The urine is in most instances normal, but in severe cases of the disease a small quantity of albumin is occasionally detected when examined for in the proper way, and on microscopic examination cylindroids are sometimes found. In all of my cases considerable quantities of indican were present in the urine, and in several instances the chlorides were diminished. On examination of the blood a very characteristic condition is found. The red cells are reduced anywhere from 10 per cent. to 75 per cent., but the hemaglobin shows a much greater diminution, in severe cases there being sometimes only 10 per cent. of this substance present. On examination of fixed specimens the red cells are found to be sometimes smaller and sometimes larger than in health, and irregularity of form is frequently observed. Nucleated cells are found in severe cases. The number of white corpuscles may be normal, or a slight diminution may occur, but in the majority of instances a moderate leucocytosis exists, this being especially marked in severe cases. I have never seen the number of cells go higher than thirteen thousand. On examining fixed preparations a diminution in the number of polymorphonuclear leucocytes is found, while there is a decided increase in the lymphocytes and eosinophiles. It is a remarkable fact that the severity of the general symptoms, and the degree of anemia does not depend directly upon the number of parasites present in the intestine. In an instance of the disease in a child ten years of age where the number of red cells was 1,550,000, and the hemoglobin 10 per cent., only forty worms were expelled after treatment,

and subsequent examinations showed that none were left in the intestinal tract. On the other hand, I recently saw a medical student who was in good health, comparatively speaking, who was not greatly anemic, and who was well developed, from whom there were obtained 960 worms. It is extremely difficult to say how long the disease may last, as the first symptoms come on insidiously, and it is even common for those who have had the disease some time to look upon themselves as being healthy. I have seen one case where the malady had probably existed for fourteen years, but in this instance repeated reinfection had probably occurred. We do not know how long the American hookworm may live, but it is said that the old world species attains an age of from five to eight years.

Treatment.—No malady so grave as this can be cured with such rapidity and certainty, and the time necessary to complete the treatment is only about twenty-four hours. Two drugs are said to act efficiently in killing the parasites—thymol and male fern—the latter of which I have never employed, but it should be given in the ordinary dose, after previously preparing the patient in the same way as when thymol is to be administered. On the day before either of these drugs is to be given the patient should take a very light dinner, and no supper at all should be eaten. In the afternoon ten grains of calomel are administered, and if this should not act before bedtime it is well to give in addition either oil or some saline. During the night the bowels should move at least three times in order that the fecal matter as far as is possible may be removed from around the parasites; if the proper degree of purgation be not secured, laxatives should be given on the following morning until several evacuations are produced, after which the thymol is administered. In those instances

where the bowels act properly during the night the patient is given thirty grains of finely powdered thymol on awakening in the morning, and two hours later a similar dose is again exhibited. The sufferer eats no breakfast or dinner, and remains confined to bed during the day. Toward noon coffee or tea may be allowed, but beverages containing alcohol should be strictly interdicted for the reason that they dissolve the thymol and permit its absorption, and under such circumstances its poisonous effects may be produced. After the second dose of thymol is administered the stools are carefully preserved, and should be examined to determine if the parasites have been expelled. Late in the afternoon a dose of salts is given, following which the bulk of the worms is generally passed. The patient is allowed to eat his usual supper. It may be thought by the inexperienced that sixty grains of thymol within two hours is a rather large dose, but I have never seen any ill effects from it except in an instance where, as the result of taking some whisky an hour or so after the last dose of the drug was given, slowness of the pulse and slight delirium were produced. In the youngest patient that I have seen with this disease, who was a girl of ten years of age, and extremely weak, absolutely no ill effect followed the administration of the quantity of the medicament above mentioned. Of course in young children the dose should be less. Leichtenstern has even administered as much as two and a half drams of finely powdered thymol within the prescribed period, and saw no ill effects result. When the treatment is carried out as indicated, I have never seen an instance where complete expulsion of the worms was not secured, but if the patient fails to follow the directions, particularly as regards not eating

the day before, free purgation, and the taking of *sixty grains of finely powdered thymol*, this result may not be obtained. Following this treatment it is really unnecessary to do anything further, as from a number of observations I am convinced that tonics, such as strychnin, quinine, iron, arsenic, etc., exert no decided influence toward restoring the patient more rapidly to health, but of course there can be no harm in giving them. In recent cases, and in those that are not severe, recovery takes place rapidly, but on the other hand in instances where profound anemia exists, regeneration of the blood and return of strength occur very slowly—a period of from three to six months being necessary in order for this to be brought about. Notwithstanding the fact that my results have been uniformly good, it is highly probable, as is the case in the old world, that occasionally no benefit will result from treatment, and that death from the disease itself, or some intercurrent malady, will sooner or later supervene.

The profession in the South should earnestly take up this matter, for, as I have said in a previous paper, in no other serious disease does the victim suffer so long, in no other condition is he for such a period a menace to those about him, and in no other malady of such gravity is the treatment so rapidly and surely successful.

As was stated in the beginning of this paper, most of my work upon this subject was done in southern Georgia and northern Florida where I was more particularly engaged in studying malaria. My observations were practically confined to the towns along the Georgia, Southern and Florida Railway, and I do not feel that I can close this paper without extending my thanks

to the Hon. John I. Hall, General Counsel, for his kindness in requesting, and to Mr. William Checkley Shaw, Vice-President of this road, for his generosity in granting me free transportation over the line which he controls. This acknowledgment affords me a great deal of pleasure, as it is a rather unusual spectacle in our commercial times for men of affairs to exhibit such interest in scientific matters—an interest which I wish every one living along the line of this road could know of and appreciate.

THE REMOTE EFFECTS OF LATENT GONORRHEA IN THE FEMALE.

By W. E. FITCH, M.D., Savannah.

Gonorrhea in the female as now understood is most generally found in the practice of the gynecologist rather than in the work of the specialist in venereal diseases. This would seem, *a priori*, a trifle paradoxical, yet if the more advanced views be correct, the correlatives of gonorrhea and gleet in the male are too frequently regarded as simple non-venereal in the female.

The special consideration of the effects of gonorrheal infection upon the female sexual organs is of great practical value, the more especially as the *materies morbi* of the disease is primarily generated in woman. It is a striking clinical fact that gonorrheal inflammation in the female rarely presents considerations physically analogous to those observed in the male. Vaginitis of venereal origin is exceptional, and urethritis, the only real analogue, is excessively rare in women, and, moreover, does not always occur when virulent vaginitis exists. The rarity of virulent vaginitis, even in the *demi-monde*, that numerous class of unfortunates from whom the male acquires the disease, is only explicable by: 1, the existence of a latent gonorrheal process of a greater or less degree of virulency in the female; 2, the gradual acclimation of the vaginal mucous membrane to the toxic products of organic decomposition slowly formed in the female generative apparatus. If it be accepted that the urethra of the male may become accli-

mated to morbid conditions existing in the female, as is often seen in the husbands of women who are infectious to any strange male with whom they sustain sexual contact, it must also be accepted that the vagina becomes inured to the contact of the irritating products of morbid conditions of the mucous membrance higher up—i.e., becomes tolerant of autogenic poisons. This same tolerance explains the resistance of such women to the disease when they are exposed to contagion.

While the relative inherent toughness of the vagina, is such that it may serve as a vessel where the toxic materials can be elaborated without itself becoming infected by them, this inherent resistancy does not exist to the endometrium, cervical or corporal, fallopian tubes and peritoneum; hence women may be affected by more or less active gonorrheal processes in these parts while the vagina is apparently healthy.

The importance of the direct and remote results of gonorrhea in women can hardly be overestimated, and has only recently received its just share of attention foreshadowed by the labors and once ridiculed theories of the great pioneer in this field, Noeggerath. The researches of modern operative gynecologists are developing most astonishing facts. The more carefully we study pelvic diseases in women, the narrower their etiologic field becomes, and the more frequently they are found to be due to gonorrhea. Thus, when freed from pathologic and anatomic errors, pelvic inflammations are found to be dependent in the majority of cases, if not all, upon tubal disease, and tubal disease is unquestionably due to gonorrhea and its congeners and derivatives.

Noeggerath's theory as originally advanced teaches: "That nearly all individuals (men) have at a more or less remote period of their lives contracted gonorrhea,

have apparently been cured, and are still capable of imparting infection to the female.

"That this infectiousness on the part of the male is in many instances latent, but may possibly become perceptible by the occurrence of a urethritis of greater or less severity, as a consequence of sexual intercourse. That consequent upon this latent condition of gonorrhea in the male there occurs a similar latent infection in the wives of husbands thus affected. That the majority of women who marry men who have at one time or another had gonorrhea become sooner or later the subjects of uterine and pelvic inflammations."

These views are certainly striking and suggestive, especially if the large proportion of women who have pelvic troubles of various kinds be given due consideration. It is certainly peculiar that so natural a state as matrimony should afflict women with so many varied, severe and annoying disorders of the sexual organs. Faulty hygiene, improper habits and modes of living, and hereditary transmission of physical defects, associated with sexual excess, explain these troubles to a certain extent; add to these etiological factors deliberate and vicious interference with nature's process by the performance of abortion, and we have a series of all sufficient causes for diseases of the female sexual organs. Add the elements of latent or active infection in many husbands, prostitution and illicit intercourse, with the attendant facilities for the generation and transmission of infection, and we complete the explanatory chain.

Dr. Frank Lydston, in writing on this subject, says "that 800 men in 1,000 have had gonorrhea." He further states that 90 per cent. of cases remain uncured. This coincides, though a little more conservative, with

another prominent writer's views, who makes the statement, "once a gonorrheic always a gonorrheic."

Of every hundred women who have married men formerly affected by gonorrhea, hardly ten remain well; the others are afflicted with some of the ailments which I have attempted to describe.

Making due allowance for the possibility of statistic errors and exaggerations in the original researches of Noeggerath and other workers in this field, it must still be admitted that gonorrheal infection may cause any or all of a series of disastrous results in the female pelvic organs, viz.: metritis, endometritis, salpingitis, hydrosalpinx, pyosalpinx, ovaritis, parametritis, pelvic peritonitis; menstrual disorders and sterility may occur, according to the age and severity of the process and the character of the structures affected.

The life history of the gonococcus has recently been restudied by Burum (Voit's Handbuch der Gynak; Vol. I), who believes that the gonococcus, like other micro-organisms in their evolution, has acquired specific functions, and that possibly sooner or later, by modified culture methods, it may be possible to rob this organism of its specific character and reduce it to the grade of a non-specific pus-producer. He has shown that by carrying one culture of gonococcus through medium after medium a point is reached at which its specific character is so slight that only a very mild and short attack of gonorrhea can be induced by inoculation.

While the gonococcus may to some extent be deprived of its virulence through successive cultures, it does not naturally occur in the human individual, for it is a well-known fact that many of the worst cases of ophthalmia neonatorum are derived from mothers who to all appearances have entirely recovered many years

previously from an attack of gonorrhea. Cocci which have apparently lain dormant in the tissues for years and years thus appear to spring into new life through the favoring influence of the pregnant state.

In the same way a man and woman similarly infected may continue marital relations without a renewal of the acute process, simply a subacute condition being all that remains of the primary infection. If, however, one of these individuals has intercourse with a third party, the latter in all probability will acquire a most virulent attack.

The writer does not believe in the theory of acquired immunity, for many cases are reported which prove conclusively that a man just recovered from an acute infection may become infected immediately by an exposure in an impure sexual congress.

In the prebacteriological era it was taught that, with the cessation of the purulent discharge, its specificity also disappeared. Culture specimens, however, show this to be a fallacy, for the glairy mucous discharge of chronic gleet may convey an infection of a very severe type. Noeggerath maintained that gonorrhea in women as well as in men, was a lifetime affliction.

Neisser recently contended that microscopical examination enabled a positive diagnosis of gonorrhea to be made; indeed, he went further, holding that gonococci might be present in the absence of clinical manifestations of gonorrhea. In both of these contentions he has met with objectors. One authority (Behruns) maintains that a microscopical examination is worthless. Clark supports Neisser's views. On the other hand, Nieburgal records from cases in which, although there were no subjective or objective symptoms of the

disease, and no gonococci could be discovered microscopically in the secretion, an explosion of gonorrhea was accidentally provoked by mechanical irritation (dilatation of the uterine cavity and curettage), proving that gonococci were still present in a latent type, remaining in a dormant condition.

The tendency of gonorrhea in women is to become chronic, and while the patient herself may not suffer from appreciable lesions, nevertheless a sufficient number of gonococci are present to transmit the infection; for, as has been stated above, a few organisms may induce just as virulent an attack as myriads, on account of their almost incredible rate of multiplication. On account of the persistence of this disease in the female individual, questions concerning the fidelity of married women, who may reinfect their husbands, may arise.

The possibility of gonorrheal processes becoming latent in the female is of great importance with reference to the transmission of the disease to the male. For instance, in the event that a woman has been affected at one time or another with a gonorrhea that has become localized in the fallopian tubes, it is probable that, under sexual excitement or during menstruation, a small quantity of the retained pent-up germ-laden secretion may be extruded into the uterus, mingling with the secretions of that organ and the vagina, eventually coming in contact with the urethra of the male, and exciting therein a specific or non-specific urethritis, the type depending on whether the typical gonococcus is still present or not.

To go a little further with the morbid possibilities of latent gonorrheal processes in the fallopian tubes, let it be supposed, for instance, that, as a consequence of sexual excitement, traumatism from a curettage, par-

turition, or violent exertion, a small quantity of the infectious secretion is discharged into the peritoneal cavity; obviously, localized peritonitis, with possible pelvic abscess, is likely to result. It is a suggestive fact that latent gonorrheal processes do not usually produce general peritonitis, probably because of some transformation of the *materies morbi.* This point was clearly proven in a case occurring in my practice last summer.

I was operating on a double salpingo-oöphorectomy when the left tube ruptured and quite a small quantity of the germ-laden, pent-up secretion escaped into the abdominal cavity. The wound was hurriedly closed by uniting peritoneum to peritoneum, and so on out to the skin. There was no rise of temperature or other symptom of peritonitis. A microscopical examination of the pus from this tube demonstrated the typical gonococcus; but the peritoneum, like the bladder, is relatively immune to the gonococcus, but susceptible to the mixed infection of secondary gonorrheal processes, especially if the products of such mixed infection be discharged suddenly and in large quantity into the peritoneal cavity.

Localization by plastic lymph-barriers usually protects the general peritoneum where the infection is gradual and the amount of infectious material limited.

I will not speak of the period of incubation or the symptoms of gonorrhea, for every worker in this field is familiar with both; a few thoughts on the diagnosis, however, may not be time lost or valuable space used wasted.

A whitish leucorrheal discharge in woman has no diagnostic value, but a profuse, purulent urethral discharge may be looked on as the most certain clinical evidence of gonorrhea. Urethritis in woman is, how-

ever, usually transient, and its absence at the time of observation is no evidence that there has been no gonorrheal infection. This remark applies to the chronic form of gonorrhea, where it may be possible to express a small amount of purulent matter from the urethra or from the Bartholinian ducts. Absence of such purulent matter does not necessarily negative a diagnosis of gonorrhea. For bacteriological examination the vaginal discharge is almost worthless, because it contains, as a rule, such a large amount of cocci and other bacteria. If secretions from the urethra or from Bartholin's duct, on microscopical examination, are found to contain the typical gonococci, the diagnosis is complete. The cervix should always be examined. Sims's position is the preferable decubitus. Secretions obtained directly from the cervical canal are most reliable, for when the gonococci are demonstrated then there is no longer any doubt as to the diagnosis. As treatment absolute rest in bed is of great importance when you can have the woman to understand the necessity for quiet. It is especially during menstruation that rest is most essential, as conditions are then more favorable for the spread of infection.

The disease is normally self-limited, and if complications can be prevented not only is recovery likely to be secured within a reasonable period, but prolonged infectiousness may be prevented. The chief aim of the physician should be to prevent the extension of infectious inflammation. Rest is the best means of accomplishing this; sexual rest especially is of the greatest importance. Vaginal douches of permanganate of potassium 1 to 2000, or 1 to 1000, are indispensable. Mercury bichloride and silver nitrate are valuable, but not so trustworthy as permanganate of potassium.

Urethritis and vesical complications demand balsams

and alkalies with the permanganate irrigations. Anodynes and sedatives may be indicated in some cases, especially if complications occur or sexual irritation be marked. If much pain and a frequent desire to void urine, cystogen administered with F. E. corn-silk, triticum repens and saw-palmetto co., will give speedy relief.

I will report a case which beautifully illustrates the point in question, which occurred in my practice a few years ago.

On April 20, 1899, Mr. Blank, aged forty-five, a prominent railroad official presented himself at my office for treatment. An examination into his personal history elicited the fact that in his day he had been a "high roller," and at the age of twenty-five had contracted gonorrhea from which he recovered without any evident complications. About six years before consulting me he had taken the vows of matrimony. He was very positive in his statement to me that he had not had any gonorrheal trouble since he was cured of his first attack; his urethral secretion was examined microscopically without finding any of the characteristic gonococci. Not being satisfied with my findings, I had a colleague to examine a specimen, with like results; after which I told Mr. Blank that he had a gonorrhea and treated him accordingly. His symptoms rapidly yielded to treatment, and at the end of three weeks he was dismissed, as there was no longer any indications for continuing the treatment.

On May 12, same year, Mr. Blank telephoned me to call at his residence at my earliest possible convenience. I thought that I was to find some further development in his case. However, when I arrived he met me at the door and told me that the trouble was with his wife. Upon a close interrogation, I succeeded

in drawing from Mrs. Blank the following: she had never before had any vaginal or uterine trouble, with the exception of painful dysmenorrhea, and being a lady of refined sensibilities she was much abashed and greatly chagrined at her symptoms. On a visual examination I found a profuse sero-purulent discharge from the vagina; with a speculum, I also found the same discharge pouring from the os uteri, and on closer inspection the Bartholinian ducts were seen to be discharging the same kind of material. I obtained three separate specimens, one from the os uteri, one from the Bartholinian ducts and another from the vagina; all of which were examined microscopically by myself and colleague, in neither of which did we find the typical gonococci. The patient's temperature was 101 F., pulse accelerated and abdomen swollen and very tender, especially over both ovarian regions. I at once ordered a utero-ovarian sedative, had turpentine stupes applied over the lower abdomen, and ordered an antiseptic vaginal douche, potassium permanganate, strength 1-1500; this was administered every six hours, with the patient lying on her back with hips elevated. The douche was administered from a fountain syringe elevated about two feet higher than the patient's body. This treatment was continued, and the discharge disappeared in four weeks and all other annoying symptoms soon abated and she was soon pronounced well. This undoubtedly was a case of non-specific gonorrhea; the germs had lain dormant in the folds of Mr. Blank's urethra for more than twenty years.

Two years after this attack Mrs. Blank consulted me for sterility, and her dysmenorrhea, which was still giving her much annoyance. I advised a dilatation of the uterine canal and thorough curettage, under an anesthetic, which was accepted. The next week, with

thorough antiseptic precautions, the operation was performed; but it was necessary to hurry the procedure, as the patient did not take the anesthetic very well; in fact, she came very near crossing the dark river.

Ten days after this operation she developed a most virulent vaginitis with a very profuse sero-purulent discharge. A specimen of the discharge from the os uteri demonstrated the presence of myriads of gonococci, which stained beautifully with methyeln blue solution, bringing out the biscuit-shaped cocci in pairs. The diagnosis was plain, and she was again placed upon the same treatment as formerly—viz., utero-ovarian sedatives, turpentine stupes, and permanganate solution for douches. The cavity of the uterus was swabbed out with pure carbolic acid and immediately after a syringeful of alcohol was thrown into the uterus. The vagina was loosely packed with sterile gauze, the uterine application was repeated again in two days and the other treatment continued as in the first instance. She finally, after four weeks, again recovered, and she now has no trouble, with the exception of a small pyosalpinx of the left tube which may some day require surgical intervention.

EMOTIONAL INFLUENCE OVER PHYSICAL ACTION.

By N. B. DREWRY, M.D., Griffin.

The multifariousness and the metaphysical bearings that the conscious, mental and emotional part of man holds to his complicated make-up, and the relation that these bear to all the *modus operandi* of the race, have been much neglected or overlooked by the medical profession, and are almost wholly ignored by all other people.

The pathogenetic influences that these wield, or might, at least, contribute to the medical world in their efforts after diagnostic truth, have been neglected by scientist and physiologist alike, not so much because its importance has not been recognized by them as a factor in diagnostic results, but probably for a want of proper opportunity for experimentation and demonstration for satisfactory results.

A false sympathy on the part of the laity, perhaps, has had much to do with closing the avenues of profitable and satisfactory investigation, therefore, has greatly hampered the desire for search after the truth, in a condition to which so many are subjects to a greater or less degree ; and too close an investigation would reveal the fact that under certain peculiar circumstances and physiological conditions of this delicately constituted organism, an alarming number, perhaps all to some extent at least, might find themselves entangled in these meshes under varying peculiar circumstances.

It has been written, "strange that a harp of a thousand strings should keep in tune so long"; we may very properly add, with many thousand strings, and they on ceaseless tension, with innumerable performers of the world, the flesh and the devil fingering them day and night, whether this instrument abides in the crowded theaters of the commercial or professional world, in the quietude of the rural home, or in the retirement of the closet, communing with the Father God who gave to his creatures this almost incomprehensible keyboard, to be touched from every conceivable source through which this psychic stigmata is evolved, and from which flows a great stream of unaccountable results.

It will be readily seen from this short introduction, that this subject is too far-reaching in itself, as well as in its effect upon the multitudinous phases of human conduct and the multifarious maladies that our profession have to deal with in their daily calls, for this paper to do more than submit a few suggestions for your consideration, with the hope that a healthful and profitable discussion may be evolved out of it, whereby the world may be able to more readily understand and sympathize with action, in relation to a perverted conscience growing out of psychoneurosis, or some other mental distortion.

Editorially the Journal of the American Medical Association remarks: "Despite the study that has been given the subject, the physiology of sleep and waking, of consciousness and unconsciousness, has not been fully cleared up." There is still an unexplored region of the physiological entity; between rational and irrational, between a state of reason and unconsciousness. The physiological is making an effort to replace the metaphysical, so that necessarily functional activity is ex-

plained by cellular activity, and aberration by derangement of that activity; therefore, it may be concluded that the waking state is dependent upon certain natural nutritive conditions of the cortical cells and their normal processes, and all the departures from that state, such as sleep, coma, delirium and dementia, result from some departure from this healthful nutritive condition, itself the result of some metabolic activities arising either from some pathological condition or from some extraneous cause, such as the use of drugs or a fit of anger, by which consciousness and the reasoning forces are held in abeyance while the emotional hold sway, and deeds of violence are committed that are unlawful and inhumane, and for which the perpetrator must, under the law and the rules of society, show reasons of self-security for their commission, or suffer a penalty.

It has been shown beyond a reasonable doubt, by experimentation, that automatic action is performed more rapidly than conscious or intelligent action. The time required for a simple reflex movement is from .066 to .057 part of a second, while the time required for a conscious sensation and repose is from .16 to .22 part of a second (Exmer). It is a law that no nerve action, the duration of which is less than a psychic action, can arouse consciousness (Robert). Therefore, we see, in part at least, that when automatic acts are repeated until they are performed very rapidly, they are performed without arousing consciousnes, and are clearly and solely emotional, consequently only automatic. There must be functional activity of the brain in order to develop sensibility and rationality. Should this be suspended from any one of the many unknown causes, there would follow a period of unconsciousness and involuntary action for which the body should not be held responsible.

Much of course depends upon the intensity of the suspension of this functional activity as well as upon the length of its duration. How are we, how are psychologists, physiologists, or any other scientist to determine about these periods, their length, or the depth of this emotional paroxysm without being able to compute the extent of the generating capacity of the cerebral forces, and the susceptibility and viability of its circulating medium.

After action has been induced, and by some "vis a vitallis" is repeated, and the brain fails to receive a normal supply of the stimuli that it is accustomed to receive from the natural and healthful forces coursing along nature's paths that are calculated to and fitted for evolving new impressions, then consciousness fails to respond to the nervous or sensory impressions, and then as a result unconsciousness and irresponsibility prevail. The impression has stimulated the nervous system to a sensory and to an emotional degree, that action follows before intelligence or physiological evolution has time to decide either the cause or the effect of such action as may follow.

Pending this decision the sensory nature may, and often does, assert its rebellious self, and a paroxysmal, emotional fit seizes the brain; then healthful and normal stimulus is delayed, either from a hyperemic condition following the stage of excitement, or a spasmodic flow of the cerebral stimulant which induces their inversion from their normal and quiescent state; then a senseless and uncontrollable desire to avenge an imaginary physical wrong follows.

There are some very plausible reasons why we may feel sure that this state of emotional accountability has a period and a place in every human organism. Under certain peculiar circumstances and conditions reflex in-

fluence plays an important part in the physical impressions and actions of every individual, as by it the promoting viability of the cortical cells are unfavorably impressed, and lethargy, stupor and coma follow; if with no other and more serious results.

This condition is sometimes observed simply from exposure to extremes of heat and cold, fits of anger, shocks from fright, or bodily pain of sufficient intensity to interrupt digestion or in any way disturb the functions of secretion, whether it be temporary, prolonged or permanent. If it is of sufficient magnitude to detract from the normal supply of stimulating fluid that controls the mental ballasting power which secures to the body its healthful, vigorous and uniform movements, then the mental and will-power will be shorn of its serenity; then the result certainly would be an outcropping of unusual acts and words that might eventuate in wrong-doing—acts that would be harmful to those who may have excited this desire for revenge, to an extent that it may be justly classed as spasmodic or emotional dementia. This condition may grow out from some type of degeneracy or heredity that has not been anticipated, and cannot be accounted for from any known family history or environment; but when there is no longer any flow of the mental vitalizing fluid (no matter from what cause) to promote reason, then a prolonged, emotional, ungovernable desire to gratify an evil spirit is in the ascendency, and the immediate succeeding acts are what are termed lawlessness.

There are grave questions growing out of this theory of emotional conduct that are important to human life and human action, and demand the most serious, thoughtful scientific research that can possibly be evolved out of the most astute minds of the scientific world. This is not a new subject. Many have recognized the importance of it in their investigations, in the physio-

AN UNCLASSIFIED FEVER OF THE SOUTH.

By E. C. THRASH, M.D., Oakland.

It is generally conceded by most southern physicians that we have with us a pathological condition that has never received proper recognition in medical literature. Every one who practices medicine here for many years will admit that he meets with a fever which can not be listed in the class of diseases that he has been taught to recognize. He feels, when he begins his career, that a niche exists in his brain for each type of fever, but he soon finds one for which he has no place, and, when investigation is made, discovers that no one else has given it its proper place in literature. Aside from exanthems, only two fevers receive any consideration worthy of note; these are malarial and typhoid. There are, however, a few febrile conditions designated by such names as ephemeral fever, gastric fever, catarrhal fever, irritant fever or any other name that the symptoms would suggest, which have no recognized pathology or etiology, and which receive, as they deserve, only passing notice. The fever we have under consideration is of so much graver nature than these latter named maladies, and is so different from them, that a comparison would be unnecessary. This fever, as we all know, goes hand in hand with the two first named diseases, erroneously classed with first one and then the other, owing to the company it is keeping, the locality in which it sees fit to attack its victim, or the symptoms manifested in its course. We do our patient an

injustice, on account of improved methods of diagnosis, to longer grope in darkness in the differentiation of these diseases. The microscope has turned on the search-light, and we are shaken from our pedestal of uncertainty. The specific cause of typhoid and malarial fevers have been silhouetted on the shadowy field of pathology, and we can no longer, at our convenience, interchange them with each other or other diseases, or place other diseases in their class. We must face conditions as they really exist, and say, here, on the one hand, standing out in bold relief, is malaria, which our clinical experience for the past two thousand years has taught us to know, and which knowledge the microscope in recent years has confirmed most emphatically; there, on the other, is typhoid, which we have learned to recognize equally well, and in which the microscope has done almost equally good work. We have no middle ground. Absolutely there is no typho-malarial fever as some clinicians use the term. The expression grates harshly upon the ear of a scientific physician. The resultant combined effect of the germs of these two diseases cannot be simpler than either one taken separately. The germs of each disease would manifest themselves with the same degree of distinctness as that of the caterpillar and the mole in the same field. It is not impossible for us to have a mixed infection, but this is a clinical curiosity rather than a common condition, and the victim whose economy should be infected with both classes of germs at the same time would be as the field infested with both moles and caterpillars. The pathogenic result of these two fevers working together would be doubly effectual as compared with either one working singly. Only under such a condition as this can we have typho-malarial fever; consequently the term could not represent the mild affection

about which we are now endeavoring to awaken your interest.

This malady, while it is not a hybrid, has some resemblance to both the above mentioned diseases, but is a little milder than either when each is left to run its course. It has been loosely tossed from one of these to the other, with exceeding indifference as to the exactness in diagnosis, but now, since the distinction between malaria and typhoid fever has become so clear, we have this malady standing out distinctly, demanding recognition as being independent of either.

A short description, and we will endeavor to compare this with similar fevers. It is strictly speaking sporadic in its nature, the writer never having seen, except once, more than one case in the same house at the same time, and never a serious epidemic at any time, though it is endemic. It is confined to no special locality, but more prone to get in its ravages in badly drained sections, or where the surroundings are unhygienic. The same conditions which produce the malarial-bearing mosquito seem to be favorable to the production of this disease. Yet, in my opinion, the hematozoön may plead not guilty to the charge of being a factor in this disease, and the microscope has thus far borne witness to its innocence; for by this instrument, as yet, the bloodthirsty mosquito borne parasite has been able to prove an alibi. It occurs quite frequently, however, where malaria has never been known, and may often be found in a vicinity infected with typhoid fever, when it will be diagnosed and treated as mild typhoid. This fever may occur at all seasons, but is most commonly seen in summer and autumn. Its onset is not usually with high temperature, or with very marked remittence or intermittence, but with prodromes somewhat resembling a mild case of typhoid fever. In the begin-

ning the temperature is from 101° to 103°, but during fastigium it may run to 102° or 104°. The pulse is always fairly good, there being no decided weakening of the heart, as in typhoid. There is not always a decided evening exacerbation and morning decline, but the fever is sometimes irregular and continuous, varying from one to two degrees. Tongue is generally pointed, with red margin, having light coat, growing more or less thickened and brown as more or less mercury is given, or as the system is more or less poisoned with the ptomains and toxins of the disease. There is some tenderness over stomach and bowels, but as usual no tympanites. It runs a course of from ten days to three weeks with varying degrees of severity, but almost always terminates in recovery. The cause of this disease is as yet only conjecture. It is evidently a ptomainic fever. There is possibly a pathogenic organism that produces these toxins that bring about so marked a derangement of the digestive functions. That often complex condition which we, for the lack of a better term, still refer to as "biliousness" plays no small part as a causative factor in this disease.

In comparing it with the two fevers, either of whose names it often receives, we will first take up malaria. Marchiafava, who has possibly made the most profound researches in malarial conditions of any man on the globe, and whose discovery of the manner of transmitting the plasmodium malariæ from one person to another is one of the greatest pieces of work that has ever been accomplished in medical science, says: "Previous to the discovery of the malarial parasite, and even afterwards, before it was the custom to examine the blood, many forms of fever were included among the subcontinuous malarial type which in reality had no connection with the infection, as is easily proved by

their symptoms, their long duration in spite of the administration of quinine, and the data given by pathological anatomy. It is a well-known fact that physicians practicing in malarial countries have a tendency to mistake for malaria infective diseases of quite a different nature, or to regard it as a complication in other diseases." This author further states that he doubts the malarial origin of a number of fevers of a remittent type, this doubt, he says, being based upon the clinical description, the anatomico-pathological findings, or the absolute non-influence upon them of the specific remedy for malaria. One of the strongest points he makes on this subject is as follows: "In a detailed study of the estivo-autumnal fevers we shall see how, in malarial seasons and climates, infective fevers occur whose etiology is yet unknown, and which, without an examination of the blood, might even at the present day be confounded with diseases of a malarial origin."

We know it to be a fact that almost all pathological phenomena that come before us in patients living in malarial districts are attributive to malaria. We will say that a malady is malaria because quinine relieves it, and at the same time call another case malaria and then enter into a long train of reasoning to show why quinine does not relieve it. We worry along with a fever for three or four weeks, heavily loading the victim, whose vital forces are almost ready to succumb, with quinine from day to day, getting positively no remission of febrile conditions, when the above quoted author tells us that the continuous malarial fever with which we are associating this affection has a course of so short a duration that we can not study its clinical aspects on account of our prompt and efficient means of relieving it. He further states, too, that there is such a terrible abuse of quinine in mistaking other diseases for malaria,

that faith is often shaken in the specific value of this remedy. Sternburg and Osler both say that this confusion, this including so many fever types under one head and calling all malarial fever, is chaos.

In our meeting in 1902, while we were discussing this same question, Dr. Oertel said that he had sixteen smears from the blood of as many cases of this fever sent him from South Carolina last year, and from a careful examination he failed to find the parasite in a single instance. He emphasized the fact, too, that he knew this parasite, and would have found it had it been there; and stated further that he thought it was not malaria. Laveran, the discoverer of the hematozoon of malaria, says he can not include among maladies produced by this parasite those fevers of long duration, which resist the action of quinine. When men like these, who have made malaria a life-study, and who have made such inroads into its mysteries, and the result of whose researches has given us such rich fruits, when such men speak, they should be heard, and more especially when their statements are in line with our every-day experience. There are only three clinical varieties of malarial fever represented by their respective parasites. All other types are only variations and intermingling of these three varieties; and we can not conceive of any combination of these that could possibly be so constant in its action as to take on the clinical type of the fever we are endeavoring to classify, when quinine plays a part in the treatment. It is held by some that it is a form of estivo-autumnal fever, with continuous sporulation. I would like to say this to those who have such an opinion: When a suspected case of estivo-autumnal fever has been loaded on quinine at the rate of twenty to forty grains per day for two or three days without a decided remission of fever,

the treatment should be changed or the patient's life may be jeopardized, for the trouble is not likely produced by the plasmodium malariæ. Laveran, Bignami, Celli, Osler, in fact all clinicians who have closely studied malaria, are emphatic in their assertion that quinine is an absolute specific in every phase of this fever; and in my opinion, when we do not get a responsive effect from its proper administration, we have not to deal with this deadly parasite, and we should immediately stop waging war on an enemy that does not exist.

There is a marked resemblance of this fever to typhoid. In fact severe types simulate typhoid to such a degree that differentiation is often difficult, and especially is this so in sporadic cases of the latter. The epidemic and contagious nature of typhoid, however, soon asserts itself, and the lethal swath it usually makes among its victims enables a diagnotician to readily make the distinction. This fever has not the grave nervous affection so typical in typhoid. There is no muscular tremor or spasms, no delirium, no subsultus. There is little tympanites, little iliac tenderness, no rose spots, no sordes on the teeth, no pea-soup alvine discharges; and above all, there is no specific germ. The pathological disturbances are in every particular milder than typhoid, and the contagiousness, if at all, is less manifest.

It is clear in the writer's mind that this fever should be classified and given the study its importance demands. It is not a typho-malarial fever, however, as we have endeavored to show, and should no longer receive such designation. I can think of no more intelligible name than *endemic gastro-enteric fever*. Endemic because its prevalence is confined as a rule to southern localities, and generally to malarious sections; gastro-enteric because the pathological manifestations are con-

fined principally to the alimentary tract, the leading symptoms being a perversion of digestive functions, with all the sequelæ that would naturally follow such a condition.

The treatment can be outlined in a few words. Success will depend more upon what is not done than what we do. It is a lamentable fact that many victims of fever die from the treatment and not from the disease, and especially is such the case in this class of fevers. The importunities of the family will often cause us to transcend the dictates of our judgment. They insist that "he must have something to clean off his tongue," and will say: "Doctor, you let his fever run higher to-day than yesterday. Do keep it down to-day, and whatever you do, don't let it run into typhoid." In our effort to not let it "run as high to-day as yesterday," we are in danger of reducing the fever at the expense of the patient's vitality, and in "cleaning off the tongue," we often get a fouler coat and thicker tongue as a result of mercurial poisoning. I would like to state here that a thermometer is an instrument for good in the hands of physicians and competent nurses, but turned over to anxious, nervous, incompetent mothers or sisters, they are a bane and a curse. We should always bear in mind that the elevation of temperature is not the disease but only a symptom, and will take care of itself if we take care of the pathological disturbances causing it. The administration of quinine in the erroneous belief that a case of malaria is being treated brings on untoward symptoms that is too often attributed to the malady itself. There will be dyspnea, palpitation, nervous twitching, deafness, flushing of the face, higher fever, hematuria, and often death.

It is more necessary to emphasize what not to do

than what to do, but what should be done is to give sparingly easily assimilated foods, keep the emunctory organs in as good condition as possible, keep the bowels well evacuated with salines or cascara, with an occasional small dose of mercury. Salol often proves beneficial, and nothiug can be better administered as routine treatment. Opiates are highly beneficial and especially Dover's powders. Nothing in my hands acts so nicely upon the skin, quiets the nerves, relieves cardiac excitement, blanches the flushed cheeks, cools the fever, and induces quiet sleep half so well as this old well-tried remedy. I can sum up the treatment in no better way than to say, keep the patient comfortable, keep the vital forces supported, keep the room cool and ventilated, use tact in alleviating the anxiety of the family, avoid too much drugging, and the patient will almost invariably recover.

CONSTITUTION AND BY-LAWS

OF THE

Medical Association of Georgia.

CONSTITUTION.

ARTICLE I.

Name.

SECTION 1. -The name of this Association shall be "The Medical Association of Georgia."

Objects.

SEC. 2. The objects of this Association shall be to organize the medical profession of the State in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics, and to promote professional brotherhood.

ARTICLE II.

Members.

SECTION 1. Any white physician who resides within the limits of the State, who is a graduate of a regular medical college in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

ARTICLE III.

Officers.

SECTION 1. The officers of this Association shall consist of one President, two Vice-Presidents, one Secretary and Treasurer, and five Censors.

SEC. 2. The President and Vice-Presidents shall be elected for one year; the Secretary and Treasurer for five years; each officer shall continue in office until his successor is elected and installed.

SEC. 3. Members of the Board of Censors shall be elected for a term of five years. There shall be an annual election of one member. Vacancies occurring from other causes shall be filled for the unexpired term.

ARTICLE IV.

President.

SECTION 1. The President shall be the chief executive officer of the Association. He shall preside at all the meetings of this body, preserve order, and perform such other duties as parliamentary usages impose on presiding officers.

SEC. 2. The President shall be *ex officio* member of all annual committees.

SEC. 3. He shall, in the intervals between the annual sessions, direct and control the general policy and business of the Association, with careful attention to its constitutional provisions.

SEC. 4. He shall appoint all annual committees, except Committee on New Members; he appoints only the Chairman of this committee (Art. V., Sec. 7, By-Laws); also an Auditing Committee, consisting of three members, whose duty it shall be to investigate and audit the books

and accounts of the Secretary and Treasurer, and report their findings to the meeting.

ARTICLE V.

Vice-President.

SECTION 1. Vice-Presidents, in their order, shall, in case of the absence or the death of the President, discharge all the duties belonging to the presidential office.

ARTICLE VI.

Secretary and Treasurer.

SECTION 1. The Secretary and Treasurer shall have charge of all the books, papers and records of the Association, shall collect the annual dues and have custody of all the moneys belonging to the Association and pay the bills of the Association when approved by the President, and shall record the minutes of the Association at all its meetings. He shall be *ex officio* member of the Publishing Committee.

SEC. 2. He shall, by February 1, send a notice to each member, of the time and place of ensuing meeting, requesting his interest and his personal efforts in securing a large attendance, and requesting each member to send the title of his paper to the Chairman of the Program Committee.

SEC. 3. He shall keep the roll of the members of this body who have retained their membership by compliance with the provisions of this Constitution, and also the names of those who have forfeited membership, together with the cause of such forfeiture.

SEC. 4. He shall furnish a balance-sheet at each annual meeting for the past fiscal year to be published in the

Transactions. This shall consist of an itemized statement of all financial transactions of the past year, all accounts made, all moneys received and from whom, and all moneys disbursed, to whom and for what purpose, with vouchers attached. (A fiscal year includes the period of time between the first day of one annual meeting and the first day of the next.)

SEC. 5. The Secretary and Treasurer shall receive as compensation for his services the sum of $400 per annum, which shall be paid out of the funds of the Association, and said Secretary and Treasurer shall give a bond in the sum of $1,000, payable to the Medical Association of Georgia, for the faithful performance of his duty.

SEC. 6. The Secretary shall provide and keep upon his desk, during each meeting, a copy of the "Rules of Order" provided for by the By-Laws.

ARTICLE VII.

Censors.

SECTION 1. The Board of Censors shall hold annual meetings concurrently with the annual sessions of the Association, to whom shall be referred all applications for membership, with vouchers from two members; and in such cases their decision shall be reported to the body for action. Three of their number shall constitute a quorum for business, and the Chairman and Secretary shall be designated by the President.

SEC. 2. They shall at all times, in the interval between, as well as during the meetings, take cognizance of all offenses against the Association or its members, or violation of the Code of Ethics (and prefer charges against the offenders). They are authorized to summon before them such members and witnesses as they may deem necessary.

They shall have the power of reproving members for cause without reporting their action to the Association. Or they may report any members to the Association for reprimand, suspension (for a definite time) or expulsion. They shall report the names of the individuals, and the offense for which action has been taken, immediately to the Association for action, at which time, or at the next succeeding meeting, such individuals may have the right to appeal to that body. Charges brought against a member or members of this Association, otherwise than by the Board of Censors, must be preferred in writing and signed by a member of this Association.

SEC. 3. The President of the Association, or the Chairman of the Board of Censors, may call the Board together at any time between the meetings, for the investigation of any offense on the part of any member or members, of sufficient importance to necessitate such action. The Board of Censors shall at all times have the power embodied in Art. VII., Sec. 2.

SEC. 4. The President and Board of Censors shall constitute a tribunal with the power to suspend any officer for cause.

ARTICLE VIII.

Finances.

SECTION 1. Every member of the Association shall pay annually into the treasury such sum as the Association may determine, which amount, it is expected, will be paid during the session of the body.

ARTICLE IX.

Constitution.

SECTION 1. The Constitution shall take immediate effect from its adoption.

SEC. 2. The By-Laws now in operation, and Order of Business, are adopted so far as they agree with this Constitution.

ARTICLE X.

Annual Meeting.

SECTION 1. The annual meetings shall take place on the third Wednesday in April, and at such place as shall be designated by the majority of the Association.

ARTICLE XI.

Amendments.

SECTION 1. Any amendment that may be offered to the Constitution shall lie over until the next annual meeting; and for its adoption at such meeting shall require a two-thirds vote of all present and voting.

BY-LAWS.

ARTICLE I.

Order of Business.

SECTION 1. Meeting of the Association at an hour appointed by the Program Committee.

SEC. 2. Report of the Annual Committees: (1) Committee of Arrangements; (2) Committee on Necrology; (3) Committee on New Members; (4) Committee on Medical Legislation.

SEC. 3. Report of Special Committees.

SEC. 4. Report of Secretary and Treasurer.

SEC. 5. Election of officers.

SEC. 6. Selection of place for next annual meeting.

SEC. 7. New business.

SEC. 8. Unfinished business.

SEC. 9. Installation of new officers.

ARTICLE II.

Election of Officers.

SECTION 1. The officers of the Association shall be elected by ballot, without a nomination, at 1 o'clock p.m., on the last day of the Association, and if there is no election on the first ballot, the three names receiving the highest number of ballots shall be voted on, the other names being dropped. If there is no election on second ballot, the two names receiving the highest number of ballots shall be voted on until elections occurs.

ARTICLE III.

Selection of Place of Meeting.

SECTION 1. Selection of place for next annual meeting shall occur immediately after the election of officers.

ARTICLE IV.

Officers.

SECTION 1. All officers of this Association shall enter upon their duties at the time of their election.

ARTICLE V.

Committees.

SECTION 1. Each committee, except the Committee on New Members (see Art. V., Sec. 7, By-Laws) and their Chairman, shall be appointed by the President.

SEC. 2. There shall be six Annual Committees, as follows:

SEC. 3. The Committee of Arrangements shall consist of five members, residents of the place selected for the ensuing meeting. They shall provide suitable accommodations for the meetings of the Association, space for medical and surgical exhibits, and make such other local arrangements as they may deem essential for the success of the meeting.

SEC. 4. The Committee on Necrology shall consist of five members, whose duty it shall be to procure short memorials of deceased members, and present them for publication in the Transactions.

SEC. 5. Committee on New Members shall consist of a Chairman appointed by the President, and one other member from each county in the State, who shall be appointed

by the Chairman. The duties of this committee shall be to make as complete a directory of the regular physicians in this State as possible, and at such times as they deem best to issue a circular letter to these physicians, requesting them to become members of this Association and attend its meetings. Each member of this committee will send to the Chairman as accurate and complete a list of the regular physicians residing in his own and adjoining counties as possible.

SEC. 6. The Committee on Legislation shall consist of six members appointed by the President for a term of three years, who shall reside at the capital of the State, provided that at the first appointment under this By-Law, two shall be appointed for one year, two for two years and two for three years. Subsequent appointments to fill expired terms shall be for three years. Vacancies that may occur from other causes shall be filled by appointment for the unexpired term. It shall be the duty of the Committee on Legislation to take cognizance of any question that may be referred to it by the Association, to resist any undesirable change or the repeal of any salutary medical law of the State, and to frame such bills and assist in securing such legislation as may seem beneficial or necessary, and to aid as far as may be practicable in the discovery and prosecution of all violators of statutes relating directly to the practice of medicine in this State.

SEC. 7. There shall be an Executive Committee of five members elected, one to serve one year, one two years, one three years, one four years and one five years; and thereafter, as the vacancies occur, annually a member shall be elected to serve for a period of five years. Vacancies occurring between sessions shall be temporarily filled by the President. It shall be the duty of this committee to discharge all business matters of the Association, not other-

wise provided for by the Constitution and By-Laws. This committee shall report to the Association for its approval.

ARTICLE VI.

Membership.

SECTION 1. Any member, for old age, length of service, or other good reasons, can, upon the recommendation of the Board of Censors, be elected to an honorary membership without dues; otherwise they shall be governed by the rules applying to active members.

SEC. 2. The names of all applicants for membership, whose application is indorsed by two members of this Association, and accompanied by the initiation fee, shall first be presented to the Association through the Secretary and then referred to the Board of Censors, who shall report their action to the meeting for adoption.

SEC. 3. Any physician qualifying under Article II., section 1 of the Constitution, whose application is vouched for by two members of this Association, and accompanied by the initiation fee, may, on the discretion of the President, be accepted before Association convenes, as a temporary member. Such membership can be made regular only by the action of the Association, as provided for in Article VI., Section 2 of the By-Laws.

ARTICLE VII.

Finance.

SECTION 1. Each member on admission shall pay an initiation fee of five dollars, which shall include his dues for the first year.

SEC. 2. Each member shall pay in advance the sum of three dollars annually thereafter.

SEC. 3. All members who have neglected to pay their dues for two years shall be reported to the Executive Committee by the Secretary and Treasurer. The Executive Committee shall have the power to forfeit the membership of such delinquents. The Secretary and Treasurer will notify the members of the action of said committee and the state of their account.

SEC. 4. No physician who is in any way indebted to the Association will be eligible to membership until such indebtedness is cancelled.

ARTICLE VIII.

Papers.

SECTION 1. The titles of all papers to be read at any annual meeting shall be furnished the Secretary and Treasurer thirty days before the meeting.

SEC. 2. Not more than twenty minutes shall be occupied in reading any paper. No speaker shall be allowed to speak a second time on the same subject, nor consume more than five minutes in the discussion.

SEC. 3. No paper shall occupy over twenty pages of the Transactions.

SEC. 4. The Secretary and Treasurer shall decline to publish any paper not handed to the Secretary complete before the final adjournment of the annual meeting.

SEC. 5. No paper shall be read before the Association that has already been published, or that has been read before any other body.

SEC. 6. A member presenting a paper must be present at the meeting in order to have it published in the Transactions.

ARTICLE IX.

Quorum.

SECTION 1. The members present shall constitute a quorum for all business, excepting the admission of new members, or acting upon amendments to the Constitution and By-Laws, when not less than twenty-five members must be in attendance.

ARTICLE X.

Decorum.

SECTION 1. No remarks reflecting upon the personal or professional character of any member shall be in order at any meeting, except when introduced by the Board of Censors.

ARTICLE XI.

Stenographer.

SECTION 1. The Association each year shall appoint an official stenographer.

ARTICLE XII.

Rules.

"Roberts' Rules of Order" shall be accepted as a parliamentary guide in the deliberations of the Association.

ARTICLE XIII.

SECTION 1. These By-Laws may be changed or amended at any regular meeting by a two-thirds majority of those present and voting.

ROLL OF MEMBERS

OF THE

Medical Association of Georgia

1903.

ARRANGED ALPHABETICALLY.

ABBREVIATIONS—P., President; V.-P., Vice-President; S., Secretary; C. S., Corresponding Secretary; T., Treasurer: O., Orator; C., Censor; indicating the offices the members hold or have held.

Members are particularly requested to notify the Secretary promptly on making any changes in their post-office.

The Secretary will esteem it a favor if any member will write him at once on noticing any inaccuracy or omission in the roll.

Name.	Post-office.	County.	Admitted.
Adair, W. J.	Rockmart	Polk	1897
Adair, R. E.	Taylorsville	Bartow	1897
Adams, F. L.	Elberton	Elbert	1899
Adams, W. E.	Madison	Morgan	1903
Ainesworth, Harry	Thomasville	Thomas	1902
Alexander, Orlando L.	Reidsville	Tattnall	1899
Alexander, G. L.	Forsyth	Monroe	1894
Alexander, W. H.	Blakely	Early	1900
Allen, L. C.	Hoschton	Jackson	1900
Allen, H. D.	Milledgeville	Baldwin	1891
Amason, C. T.	Nielly	Telfair	1897
Amster, L.	Atlanta	Fulton	1894
Anchors, H. L.	James	Jones	1899
Anderson, N. Z	Covington	Newton	1894
Anderson, J. M.	Shiloh	Harris	1900
Anderson, J. F.	Clinton	Jones	1901
Anthony, E. R. (V.-P.)	Griffin	Spalding	1887

Name.	Post-office.	County.	Admitted.
Armstrong, W. B	Atlanta	Fulton	1900
Arnold, T. L	Ford	Bartow	1902
Ashcraft, J. E	Atlanta	Fulton	1903
Asher, W. T	Atlanta	Fulton	1901
Ashford, J. W	Madison	Morgan	1900
Avant, A. L. R	Statesboro	Bulloch	1895
Avary, Arch	Atlanta	Fulton	1887
Avary, J. C	Atlanta	Fulton	1889
Bacon, W. W	Albany	Dougherty	1890
Bailey, J. W	Gainesville	Hall	1861
Bailey, E. M	Acworth	Cobb	1899
Baker, Thos N	Higgston	Montgomery	1899
Baird, Jas. B. (s., o., p.)	Atlanta	Fulton	1872
Baldwin, M. A	Cuthbert	Randolph	1890
Barge, A. A	Newnan	Coweta	1903
Barnett, J. M	Pretonia	Dougherty	1903
Barnum, R. E. L	Richland	Stewart	1892
Barron, R. B. (v.,-p., o)	Macon	Bibb	1884
Barrow, C	Savannah	Chatham	1903
Barrow, G. W	Americus	Sumter	1903
Barton, W. B	Morrow	Clayton	1899
Baskin, C. L	Temple	Carroll	1902
Battey, W. W	Augusta	Richmond	1896
Baxton, Thos A	Girard	Burke	1901
Belcher, F. S	Mansfield	Newton	1903
Bell, A. K	Madison	Morgan	1889
Bell, W. Jay	Atlanta	Fulton	1900
Belt, L. J	Millen	Screven	1888
Benedict, S. C. (o., c., p.)	Athens	Clarke	1883
Benson, Chas. F	Atlanta	Fulton	1897
Benson, M. F	Atlanta	Fulton	1900
Binion, W. W	Benevolence	Randolph	1893
Bishop, W. H	Roopville	Carroll	1900
Bivins, T. F	Vienna	Dooly	1897
Bizzell, B W	Atlanta	Fulton	1894
Black, A. H	Thomaston	Upson	1893
Blackburn, D. H	Dover	Screven	1902
Blalock, W. J	Atlanta	Fulton	1894
Blanchard, McD	Columbus	Muscogee	1903
Block, E. B	Atlanta	Fulton	1902
Bloomfield, Jas. C	Augusta	Richmond	1890
Bomar, E. P	Ohoopee	Tattnall	1903
Borders, D. J	Calhoun	Gordon	1899
Born, W. H	McRae	Telfair	1902

Name.	Post-office.	County.	Admitted.
Bowie, J. W	Wade,	Emanuel	1900
Boyd, W. H	Rome	Floyd	1903
Boyett, A. S	Draneville	Marion	1897
Boynton, Chas. E	Atlanta	Fulton	1900
Bradley, Francis	Atlanta	Fulton	1900
Bradley, John H	Macon	Bibb	1899
Brannon, J. W. L	Pavo	Thomas	1900
Brawner, Jas. N	Atlanta	Fulton	1900
Brewster, Warren A	Augusta	Richmond	1901
Bridges, B. L	Ellaville	Schley	1897
Brigham, W. R	Dublin	Laurens	1900
Brigham, J. C	Girard	Burke	1891
Brightwell, Chas. P	Augusta	Richmond	1901
Brinson, J. W	Wrightsville	Johnson	1901
Brock, C. O	Brockton	Jackson	1901
Brooks, H., Jr	Waycross	Ware	1901
Brown, George	Atlanta	Fulton	1899
Brown, R. E	Dublin	Laurens	1903
Bryan, J. A	Pendergrass	Jackson	1898
Bryans, R. G	Jackson	Butts	1890
Bryant, W. C	Atlanta	Fulton	1900
Bryant, W. J	Summerville	Chattooga	1892
Bullard, T. B	Palmetto	Campbell	1903
Bullard, W. M	Monticello	Jasper	1897
Bullard, William L	Columbus	Muscogee	1900
Burdett, J. R	Tennille	Washington	1889
Burford, H	Brunswick	Glynn	1888
Burns, J. K	Clarkesville	Habersham	1897
Burt, A. Moody	Macon	Bibb	1896
Bush, E. B	Colquitt	Miller	1895
Bush, O. B	Cairo	Thomas	1897
Bussey, N. B	Waverley Hall	Harris	1903
Byron, J. L	Jackson	Butts	1902
Calhoun, A. T	Cartersville	Bartow	1894
Calhoun, A. W. (V.-P., C., P.)	Atlanta	Fulton	1874
Callaway, J. A	Milledgeville	Baldwin	1888
Campbell, J. L	Atlanta	Fulton	1894
Campbell, Wm. E	Atlanta	Fulton	1900
Carson, M. F	Griffin	Spalding	1897
Carter, J. G	Scott	Johnson	1903
Carter, W. D	Winterville	Clarke	1898
Carswell, N. T	Macon	Bibb	1897
Cartledge, E. C	Atlanta	Fulton	1900
Cason, R. A	Jewels	Hancock	1903

Name.	Post-office.	County.	Admitted.
Cato, F. L.	DeSoto	Sumter	1893
Cato, R. E.	Americus	Sumter	1893
Chambers, A. S.	Inman	Fayette	1900
Chambers, R. A.	Columbus	Muscogee	1903
Champion, W. L.	Atlanta	Fulton	1894
Chance, A. A.	Wadley	Jefferson	1902
Charlton, T. J.	Savannah	Chatham	1903
Chason, G.	Bainbridge	Decatur	1902
Chason, J. D.	Bainbridge	Decatur	1895
Chason, Thomas	Donaldsonville	Decatur	1895
Cheatham, W. B.	Dawson	Terrel	1880
Chisholm, J. F.	Savannah	Chatham	1903
Christian, J. M.	Celeste	Wilkes	1898
Clark, M. A.	Macon	Bibb	1893
Clarke, G. S.	Hartwell	Hart	1902
Clark, P. S.	Darien	McIntosh	1890
Clarke, L. B.	Atlanta	Fulton	1900
Clay, T. S.	Savannah	Chatham	1903
Cochran, A. H.	Homer	Banks	1901
Coile, F. W.	Winterville	Oglethorpe	1897
Coile, J. G.	Monticello	Jasper	1897
Cole, J. E.	Elberton	Elbert	1901
Cole, J. F.	Carrollton	Carroll	1884
Coleman, E. M.	Columbus	Muscogee	1903
Coleman, Thos. D.	Augusta	Richmond	1891
Coleman, J. D.	Henderson	Houston	1897
Collier, T. J.	Griffin	Spalding	1899
Comer, Ralph,	Tignall	Wilkes	1903
Cook, J. P.	Colquitt	Miller	1902
Cook, Jno. O.	Savannah	Chatham	1901
Cooper, Hunter P.	Atlanta	Fulton	1894
Corson, E. R.	Savannah	Chatham	1895
Corbin, M. X.	Savannah	Chatham	1898
Cordle, Frank	Trion Factory	Chattooga	1898
Corry, John A.	Barnesville	Pike	1900
Cosby, F. L.	Box Spring	Talbot	1897
Cox, R. P.	Rome	Floyd	1891
Cox, W. J.	Gainesville	Hall	1894
Cranford, O. G.	Sasser	Terrell	1898
Crawford, A. H.	Abbeville	Wilcox	1893
Crawford, J. M.	Atlanta	Fulton	1888
Crawford, W. B.	Lincolnton	Lincoln	1900
Crawford, W. B.	Savannah	Chatham	1903
Crichton, L. M.	Atlanta	Fulton	1900

Name.	Post-office.	County.	Admitted.
Cromer, James D	Atlanta	Fulton	1900
Crook, Jno. M	Columbus	Muscogee	1903
Crowe, W. A	Atlanta	Fulton	1892
Crowther, J. A	Savannah	Chatham	1902
Crozier, J. H	Cedar Springs	Early	1889
Culpepper, W. F	Senoia	Coweta	1892
Currie, M. L	Ailey	Montgomery	1890
Daniel J. Wallace	Glenville	Tattnall	1898
Daniel Jno. W	Savannah	Chatham	1892
Daniels, B A	Thomasville	Thomas	1908
Daves, J. M	Blue Ridge	Fannin	1902
Davidson, A. A	Augusta	Richmond	1896
Davidson, A. C	Sharon	Taliaferro	1887
Davis, E. C	Atlanta	Fulton	1894
Davis, Jeff	Toccoa	Habersham	1893
Davis, J. P	Tennille	Washington	1903
Davis, T. B	Newnan	Coweta	1892
Davis, Wm. L	Albany	Dougherty	1893
Day, J. B. H	Social Circle	Walton	1899
Deadywler, O. L	Carlton	Madison	1898
Dean, J. G	Dawson	Terrell	1889
Dean, W. L	Woodstock	Cherokee	1894
DeLamar, W. C	Mountain Hill,	Harris	1903
Derry H. P	Macon	Bibb	1903
Denson, E. J	Allentown	Wilkinson	1897
Des Portes, Wm. L	Columbus	Muscogee	1899
Dillard, James B	Davisboro	Washington	1901
Dorminy, E. J	Fitzgerald	Irwin	1902
Dorminy, J. N	Seville	Wilcox	1901
Dorough, G. D	Quitman	Brooks	1902
Dorsey, Jr., R. T	Atlanta	Fulton	1902
Doughty, Wm. H. (c)	Augusta	Richmond	1857
Doughty, Wm. H., Jr. (v.-p)	Augusta	Richmond	1880
Dozier, R. T	Milledgeville	Baldwin	1893
Drewry, T. Ellis	Griffin	Spalding	1892
Drewry, N. B	Griffin	Spalding	1897
Duckett, P. Y	Cornelia	Habersham	1902
Duggan, J. H	Stephensville	Wilkinson	1884
Duncan, J. W	Atlanta	Fulton	1887
Dunn, M. F	Savannah	Chatham	1903
Dupre, Ira E	Danville	Twiggs	1893
Earle, C. E	Elberton	Elbert	1902
Earnest, J. G	Atlanta	Fulton	1882

Name.	Post-office.	County.	Admitted.
Eason, M. W.	Meinhard	Chatham	1902
Eberhardt, B. F.	Dry Pond	Jackson	1898
Eberhardt, J. W.	Hartwell	Hart	1897
Eberhardt, L. P.	Elberton	Elbert	1901
Edenfield, W. N.	Pinehurst	Dooly	1897
Edwards C. A.	Doerun	Colquitt	1903
Edwards, W. W.	Butler	Taylor	1903
Edwards, Walter E.	Cordele	Dooly	1899
Elder, Eugene B	Macon	Bibb	1900
Elder, S. A	High Shoals	Oconee	1900
Elkin, W. S	Atlanta	Fulton	1882
Elliott, W. H. (P.)	Savannah	Chatham	1884
Ellis, S. T.	Hagan	Tattnall	1896
Ellis, J. N.	Atlanta	Fulton	1899
Embry, B. L.	Villa Rica	Carroll	1900
Emery, W. B.	Atlanta	Fulton	1900
England, W. G.	Cedartown	Polk	1902
Erwin, Geo. C.	Young Harris	Towns	1899
Evans, J. H.	Davisborough	Washington	1897
Evans, W. W.	Higgston	Montgomery	1902
Eve, Hinton, J.	Augusta	Richmond	1901
Ezell, H. E.	Monticello	Jasper	1902
Farley, W. E.	Hamilton	Harris	1903
Farmer, J. L.	Savannah	Chatham	1897
Favre, Paul	Fayetteville	Fayette	1900
Fincher, T. H. P.	Jersey	Walton	1897
Fischer, L. C.	Atlanta.	Fulton	1900
Fitch, W. E.	Savannah	Chatham	1898
Fite, B. W.	Resaca	Gordon	1899
Fitts, W. L.	Carrollton	Carroll	1890
Fitts, P. W.	Greenville	Meriwether	1897
Folks, G. P.	Waltertown	Ware	1890
Ford, DeSaussure (V-P., C., P)	Augusta	Richmond.	1857
Foster, J. J.	College Park	Fulton	1900
Fowler, A. L	Atlanta	Fulton	1900
Fox, R. L.	Mt. Vernon	Montgomery	1902
Frazier, J. L.	McRae	Telfair	1903
Frederick, H. F.	Hawkinsville	Pulaski	1897
Fulcher, M. O.	Waynesboro	Burke	1895
Fullilove, H. M.	Athens	Clarke	1900
Furse, R. L.	Monticello	Jasper	1900
Gammage, J. T	Tippettville	Dooly	1903
Gann, Wm. F.	Columbus	Muscogee	1891

Name.	Post-office.	County.	Admitted.
Garlington, T. R	Rome	Floyd	1893
Garner, J. R.	Atlanta	Fulton	1903
Garrard, J. N.	Savannah	Chatham	1902
Gaston, J. McF., Jr.	Atlanta	Fulton	1894
Gaulden, Samuel S.	Quitman	Brooks	1892
Gheesling, J. H.	Greensboro	Greene	1891
Gholston, W. D.	Danielsville	Madison	1902
Gibson, S.	Thomson	McDuffie	1902
Giddings, C. G	Atlanta	Fulton	1902
Gillespie, J. W.	Albany	Dougherty	1897
Goethe, J. E.	Ocilla	Irwin	1897
Goldsmith, W. S.	Atlanta	Fulton	1893
Goodrich, E. C. (T.)	Augusta	Richmond	1876
Goodrich, W. H.	Augusta	Richmond	1900
Goolsby, R. C.	Juliette	Monroe	1891
Gostin, G. P.	Macon	Bibb	1902
Goss, I. H.	Athens	Clarke	1877
Graham, St. J. B	Savannah	Chatham	1898
Green, E. M.	Hartwell	Hart	1903
Green, George F.	Dublin	Laurens	1900
Green, S. H.	Chattahoochee	Fulton	1892
Green, J. H.	Decatur	DeKalb	1900
Green, Wm. L.	Point Peter	Oglethorpe	1901
Gregory, B. F.	Lumpkin	Stewart	1903
Griffin, Archie	Luke	Wilcox	1900
Griffin, W. C	Cartersville	Bartow	1897
Griffith, Jas. I.	Atlanta	Fulton	1897
Grimes, George J	Columbus	Muscogee	1872
Guinn, J. A. (V.-P.)	Conyers	Rockdale	1896
Hall, M. R	Warrenton	Warren	1900
Hall, J. R	Carnesville	Franklin	1898
Hall, Thos. M	Milledgeville	Baldwin	1899
Hammond, J. H	LaFayette	Walker	1898
Hamrick, James D	Carrollton	Carroll	1899
Hancock, Thos. H	Atlanta	Fulton	1896
Harbin, R. M	Rome	Floyd	1894
Hardeman, John	Haddocks	Jones	1899
Harden, W. P	Harmony Grove	Jackson	1903
Hardin, O. N	Homer	Banks	1901
Hardman, L. G. (V.-P.)	Harmony Grove	Jackson	1877
Hardman, W. B	Harmony Grove	Jackson	1892
Hardin, L. S.	Atlanta	Fulton	1902
Hardon, Virgil O. (O.)	Atlanta	Fulton	1886
Harper, Aubrey	Wray		1903

Name.	Post-office.	County.	Admitted
Harrington, A. F.	West Point	Troup	1903
Harris, H. W.	Dawson	Terrell	1903
Harris, E. A.	Midville	Burke	1893
Harris, H. F.	Atlanta	Fulton	1902
Harris, R. B	Savannah	Chatham	1885
Harrison, W. H, Jr	Augusta	Richmond	1886
Harrison, E. S.	Thomson	McDuffie	1897
Harvard, Virgil O	Arabi	Dooly	1900
Hawkins, J. S.	Savannah	Chatham	1903
Haygood, A. G	Oxford	Newton	1899
Head, M. M.	Zebulon	Pike	1903
Hendricks, W. H	Tifton	Berrien	1903
Heriot, G. W.	Savannah	Chatham	1903
Herman, J D	Eastman	Dodge	1884
Hesse, H. W.	Savannah	Chatham	1903
Hicks, Charles (C.,P.)	Dublin	Laurens	1884
Hiers, J. Lawton (V.-P.)	Savannah	Chatham	1895
Hightower, R. H	Dublin	Laurens	1899
Hill, W. S.	Pelham	Mitchell	1900
Hilsman, A. H	Albany	Dougherty	1901
Hilsman, P. L.	Albany	Dougherty	1871
Hobgood, L. M	Fairburn	Campbell	1900
Hobbs, A. G.	Atlanta	Fulton	1882
Hoke, Michael	Atlanta	Fulton	1901
Holbrook, W. H	Dalton	Whitfield	1900
Holland, M. M	Statesboro	Bullock	1899
Holliday, A. C	Athens	Clarke	1897
Holliday, W. Z	Augusta	Richmond	1884
Holmes, J. B. S. (V.-P., P.)	Atlanta	Fulton	1872
Holmes, W. B	Wadley	Jefferson	1899
Hooten, J. C	Ellerslie	Harris	1903
Horsley, J. S	West Point	Troup	1894
Horsley, J. S, Jr	West Point	Troup	1896
Howard, C. N., Jr.	Cusseta	Chattahoochee	1903
Hubbard, F. M	Harmony Grove	Jackson	1900
Hubbard, T. V	Atlanta	Fulton	1896
Huguley, G. Pope	Atlanta	Fulton	1899
Hull, Marion McH	Atlanta	Fulton	1900
Humphries, W. C.	Acworth	Cobb	1890
Hunter, A. P	Tifton	Berrien	1899
Hurt, Charles D. (C.)	Atlanta	Fulton	1890
Hutchins, M. B.	Atlanta	Fulton	1892
Ingram, H. R.	Coleman	Randolph	1900
Izlar, R. P	Waycross	Ware	1898

Name.	Post-office.	County.	Admitted.
Jackson, Max	Macon	Bibb	1897
Jameson, B. B	Waverly Hall	Harris	1902
Jarrell, J. A	Jackson	Butts	1899
Jarrell, J. G	Savannah	Chatham	1899
Jarrell, W. W	Savannah	Chatham	1903
Jefford, T. C	Sylvester	Worth	1902
Jelks, E. L	Quitman	Brooks	1896
Jelks, N. P	Hawkinsville	Pulaski	1882
Jenkins, C. J	Edison	Calhoun	1900
Jennings, W. W	Blakely	Early	1903
Jernigan, Charles S	Sparta	Hancock	1899
Johnson, G. H	Savannah	Chatham	1902
Johnson, J. Clarence	Atlanta	Fulton	1894
Johnson, P. M	Lovett	Laurens	1903
Johnson, J H.	Columbus	Muscogee	1903
Johnson, W. A	Rome	Floyd	1897
Joiner, B. L	Andersonville	Sumter	1897
Jones, E. F	Dublin	Laurens	1903
Jones, Henry A.	Millen	Screven	1898
Jones, J.	Savannah	Chatham	1902
Jones, Louis H. (S. & TR.)	Atlanta	Fulton	1890
Jones, L. M	Milledgeville	Baldwin	1880
Jones, T. S	Jeffersonville	Twiggs	1893
Keaton, P. H.	Kestler		1889
Kelley, T. J.	Tennille	Washington	1884
Kemp, A. Pearce	Barnesville	Pike	1899
Kendrick, W. S. (O.)	Atlanta	Fulton	1874
Kennedy, J. J	Collins	Tattnall	1902
Kennedy, W. D.	Metter	Bulloch	1902
Kennedy, J. P	Atlanta	Fulton	1900
Kennon, B. M	McRae	Telfair	1903
Kenyon, J. M.	Weston	Webster	1903
Kenyon, O. T	Dawson	Terrell	1892
Kime, R. R	Atlanta	Fulton	1892
King, Campbell C	White Plains	Greene	1900
King, J. C	Atlanta	Fulton	1896
Lamar, L	Dawson	Terrell	1903
Lane, L. P	Stillmore	Emanuel	1895
Latimer, J. H	Waycross	Ware	1897
Lattimore, Ralston	Savannah	Chatham	1898
LeConte, J. N	Atlanta	Fulton	1900
Lee, J. E	Waycross	Ware	1902
LeHardy, J. C. (T., V. P.)	Savannah	Chatham	1868

Name.	Post-office.	County.	Admitted.
Leonard, W. P	Thomaston	Upson	1902
Lewis, F. L	Camilla	Mitchell	1897
Lewis, J. H	Graves	Terrell	1900
Liddell, J. A	Cedartown	Polk	1899
Little, A. G	Valdosta	Lowndes	1902
Little, Wm. J	Macon	Bibb	1898
Lockhart, B. W	The Glades	Hall	1899
Lockhart, V. D. (V.-P.)	Mayesville	Banks	1891
Lokey, H. M	Atlanta	Fulton	1900
Lothridge, F. M	Homer	Banks	1901
Love, W. F	Crawford	Oglethorpe	1899
Lovvorn, J. L	Bowdon	Carroll	1894
Lovvorn, R. M	Bowdon	Carroll	1896
Lovvorn, W. P	Cecil	Berrien	1902
Loyd, R. C	Flat Creek	Fayette	1900
Lunsford, J. F	Preston	Webster	1903
Lyle, W. C	Augusta	Richmond	1896
McAfee, Jno. C	Macon	Bibb	1899
McAllister, J. M. C	Mt. Vernon	Montgomery	1902
McArthur, J. H	Long Pond	Montgomery	1902
McArthur, Thos. J	Unadilla	Dooly	1897
McBath, W. L	Avalon	Franklin	1900
McClain, C. F	Calhoun	Gordon	1903
McCreary, H. L	Royston	Franklin	1899
McCurry, I. L	Hartwell	Hart	1897
McDaniel, J. L	Atlanta	Fulton	1896
McDonald, J. M	McDonald	Coffee	1901
McDuffie, James H	Columbus	Muscogee	1893
McElroy, S. L	Willacoochee	Coffee	1903
McHatton, H. (C., V.-P., P.)	Macon	Bibb	1883
McIntosh, T. M	Thomasville	Thomas	1874
McJunkin, J	Toccoa	Habersham	1898
McLaws, R. B	Savannah	Chatham	1901
McLean, J. L	Birdford	Tattnall	1897
McMaster, D. E	Tennille	Washington	1894
McMaster, H. B. (C., V.-P.)	Waynesboro	Burke	1888
McNaughton, Wm. J	Covena	Emanuel	1901
McRae, A. B	Seville	Wilcox	1893
Mc Rae, C. D.	Rochelle	Wilcox	1893
McRae, F. W	Atlanta	Fulton	1887
Mack, Alexander	Hawkinsville	Pulaski	1897
Malone, J. D	Marietta	Cobb	1891
Maloy, W. C	Rhine	Dodge	1893
Maloy, H. S	Milan	Telfair	1903

Name.	Post-office.	County.	Admitted.
Mallory, R. A	Concord	Pike	1893
Mann, John O	Elko	Houston	1899
Mangham, J. E	Reynolds	Taylor	1897
Marchman, H. R	Villa Rica	Carroll	1900
Martin, H. H	Savannah	Chatham	1902
Matthews, M. F	Athens	Clarke	1898
Matthews, W. J	Middleton	Elbert	1892
Mathews, A. B	Elberton	Elbert	1901
Mayhugh, James	Sutallee	Cherokee	1900
Meadows, J. M	Vidalia	Montgomery	1903
Meldrim. C. H	St. Simons Mills	Glynn	1902
Merrill, E. L	Turin	Coweta	1900
Middlebrooks, J. D	Powder Springs	Cobb	1903
Miller, B. E	Daisy	Tattnall	1899
Miller, R. L	Tennille	Washington	1901
Miller, W. E	Lambert	Liberty	1902
Mims, S. W	Sylvania	Screven	1899
Minter, H. G	Jakin	Early	1900
Mitchell, T. Emerson	Columbus	Muscogee	1896
Mobley, H. A	Vienna	Dooly	1891
Mobley, Jno. W	Milledgeville	Baldwin	1901
Moncrief, W. Hal	Atlanta	Fulton	1900
Montgomery, A. J	Buff	Gordon	1900
Montgomery, R. O	Atlanta	Fulton	1897
Montgomery, Chas. J	Augusta	Richmond	1895
Moon, P. L	Atlanta	Fulton	1902
Moorman, Ivy W	Ambrose	Coffee	1900
Moore, K. P. (V-P., P., S., O., T.)	Macon	Bibb	1871
Moore, J. L	Griffin	Spalding	1903
Moore, J. M	Macon	Bibb	1897
Moore, N. M	Augusta	Richmond	1901
Moran, C. A.	Atlanta	Fulton	1895
Morgan, J. B. (V.-P., P.)	Augusta	Richmond	1891
Morgan, E	Vidalia	Montgomery	1902
Morrison, A. A	Savannah	Chatham	1902
Mosley, R. C	Danielsville	Madison	1899
Mull, J. C	Shannon	Floyd	1902
Murphey, Eugene E	Augusta	Richmond	1900
Murphey, C. E	Atlanta	Fulton	
Murray, S. A	Buena Vista	Marion	1903
Neal, J. W	Scotland	Telfair	1892
Neely, John C	Herndon	Burke	1900
New, James E	Dexter	Laurens	1901
Nicolson, Wm. Perrin	Atlanta	Fulton	1883

Name.	Post office.	County.	Admitted.
Niles, George M.	Marshallville	Macon	1893
Noble, G. H. (P.)	Atlanta	Fulton	1883
Nolan, C. T	Marietta	Cobb	1899
North, A. C	Newman	Coweta	1903
Norton, George M	Savannah	Chatham.	1899
Norton, W. E.	Savannah	Chatham	1899
Nunn, R. J. (C, V.-P., P)	Savannah	Chatham	1867
O'Daniel, Mark H. (O., C., V.,-P)	Bullards	Twiggs	1882
O'Daniel, W. A. (O)	Bullards	Twiggs	1886
O'Quinn, John H	Patterson	Pierce	1900
Oertel, T. E	Augusta	Richmond	1900
Oliver, A. S	Elberton	Elbert	1897
Oliveros B. F.	Savannah	Chatham	1903
Olmsted, J. C	Atlanta	Fulton	1886
Orear W. B.	Savannah	Chatham	1903
Osborne, L. N.	Hollingsworth	Banks	1900
Osborne, E. S	Savannah	Chatham	1902
Overstreet, George M	Sylvania	Screven	1899
Overstreet, James E.	Baxley	Appling	1901
Owens, W. W	Savannah	Chatham	1891
Owens, Wm	Atlanta	Fulton	1902
Paige, John D	Savannah	Chatham	1892
Palmer, J. W.	Ailey	Montgomery	1902
Pate, R. H.	Unadilla	Dooly	1903
Patten, W. L.	Milltown.	Berrien	1895
Patterson, J. C.	Lumpkin	Stewart	1894
Patterson, F. D.	Cuthbert	Randolph	1895
Patterson, J. W.	Dawson	Terrell.	1903
Pattillo, George R.	Culverton	Hancock	1899
Parks, W. B	Atlanta	Fulton	1882
Payne, A L	Fort Lamar	Madison	1898
Payne, George F.	Atlanta	Fulton	1894
Peacock, E. S	Harrison	Washington	1901
Peacock, W. F.	Vidalia	Montgomery	1899
Peete, C. H	Macon	Bibb	1893
Pendergrass, O. N	Monroe	Walton	1900
Perkinson, W. Howard	Woodstock.	Cherokee	1900
Perry, A. C	Covington	Newton	1900
Perry, M. L.	Milledgeville	Baldwin	1901
Perry, Thomas B	Milledgeville	Baldwin	
Peterson, N	Tifton	Berrien	1897
Phillips, S. Latimer	Savannah	Chatham	1890
Phillips, F. H	Harlem	Columbia	1899

Name.	Post-office.	County.	Admitted.
Pierce, George Y	Atlanta	Fulton	1900
Pilcher, W. W	Warrenton	Warren	1899
Pinckney, S. G. C	Atlanta	Fulton	1900
Pirkle, John A	Monroe	Walton	1899
Ponder, W. P	Forsyth	Monroe	1885
Powell, B. C	Villa Rica	Carroll	1896
Powell, T. O. (P.)	Milledgeville	Baldwin	1867
Poer, J. M	West Point	Troup	1900
Pope, N. Q	Atlanta	Fulton	1902
Powell, B. P	Egypt	Effingham	1902
Prather, Wm. S	Americus	Sumter	1897
Purse, B. S	Savannah	Chatham	1895
Quillian, D. D	Athens	Clarke	1892
Quillian, H. P	Arp	Banks	1888
Quillian, E. P	Olympia	Lowndes	1902
Quinn, C. T	Naylor	Lowndes	1893
Rawls, E. H	Savannah	Chatham	1901
Ray, Robert L	Devereaux	Hancock	1899
Redding, Charles D	Lindsay	Washington	1897
Redding, J. H	Waycross	Ware	1893
Reid, C. W	Pelham	Mitchell	1897
Reid, R. S	Savannah	Chatham	1903
Reynolds, H. V	Marietta	Cobb	1899
Reynolds, W. H	Lexington	Oglethorpe	1899
Richardson, C. H	Montezuma	Macon	1886
Richardson, E. H. (O., C., V.P.)	Atlanta	Fulton	1878
Ridley, F. M. (O., C., P.)	LaGrange	Troup	1887
Ridley, R. B	Atlanta	Fulton	1887
Ridley, Jr., R. B	Atlanta	Fulton	1902
Ripley, E. C	Barnesville	Pike	1897
Rippard, J. C	Waycross	Ware	1898
Roach, G. S	Johnston Station	Liberty	1902
Roberts, J. B. (V.-P.)	Atlanta	Fulton	1875
Robinson, G. W	Macon	Bibb	1903
Robinson, W. C	Atlanta	Fulton	1897
Robison, W. R	Milledgeville	Baldwin	1899
Rogers, F. S	Coleman	Randolph	1900
Rogers, J. T	Statesboro	Bulloch	1900
Rogers, O. L	Sandersville	Washington	1901
Rowe, W. J	Buford	Gwinnett	1897
Rose John R	Eastman	Dodge	1897
Ross, James T	Macon	Bibb	1891
Rosser, J. P	Atlanta	Fulton	1897

Name.	Post-office.	County.	Admitted.
Roy, Dunbar	Atlanta	Fulton	1892
Rountree, A. M	Adrian	Emanuel	1901
Rudolph, J. B	Gainesville	Hall	1900
Rumble, S	Goggins	Monroe	1891
Saliba, M. M	Savannah	Chatham	1902
Sample, R. L	Statesboro	Bulloch	1902
Sanders, W. E	Arlington	Calhoun	1899
Saunders, Jno. W	Unadilla	Dooly	1897
Scott, H. F. (o.)	Atlanta	Fulton	1879
Selman, J. L	Douglasville	Douglas	1901
Shannon, John R	Cabaniss	Monroe	1893
Sharp, L. J	Harmony Grove	Jackson	1898
Sharp, C. K	Arlington	Calhoun	1900
Sharp, W. B	Atlanta	Fulton	1900
Sharp, J. P	Baconton	Mitchell	1902
Shorter, James H	Macon	Bibb	1893
Sibbett, W. F	Douglas	Coffee	1890
Sikes, J. A. B	Iron City	Decatur	1899
Simmons, A. B	Savannah	Chatham	1891
Sims, E. H	Columbus	Muscogee	1892
Simpson, W. T	Smithville	Lee	1892
Singleton, O. G	Fort Valley	Houston	1892
Slack, Henry R	LaGrange	Troup	1893
Smith, A	Atlanta	Fulton	1903
Smith, A. A. (v.-p., p.)	Hawkinsville	Pulaski	1875
Smith, A. C	Coldwater	Elbert	1899
Smith, Claude A	Atlanta	Fulton	1900
Smith, C. O	Rocky Ford	Screven	1902
Smith, H. M	Edgewood	DeKalb	1900
Smith, J. C	Sand Hill	Carroll	1900
Smith, J. G	McDonough	Henry	1900
Smith, J. M	Valdosta	Lowndes	1899
Smith, J. R	Fitzgerald	Irwin	1902
Smith, J. W	Monroe	Walton	1901
Smith, J. Y. H	Rochelle	Wilcox	1902
Smith, K. A	Gainesville	Hall	1899
Smith, Ralph	Cartersville	Bartow	1903
Smith, S. J	Elberton	Elbert	1897
Smith, S. S	Watkinsville	Oconee	1901
Smith, T. C	Dawnville	Whitfield	1900
Smith, W. Monroe	Atlanta	Fulton	1900
Smith, Wm. T	Robley	Crawford	1902
Sommerfield, J. E	Atlanta	Fulton	1899
Sorrells, R. P	Danielsville	Madison	1887

Name.	Post-office.	County.	Admitted.
Spence, I. N. B	Social Circle	Walton	1897
Spinks, R. N	Cedartown	Polk	1900
Spratling, Edgar J	Forsyth	Monroe	1900
Standford, L. W	Waverly Hall	Harris	1903
Standifer, W. B	Blakely	Early	1886
Stanley, R. H	Dublin	Laurens	1902
Stapler, M. M	Macon	Bibb	1897
Statham, J. R	Americus	Sumter	1900
Stephens, L. P	Atlanta	Fulton	1888
Stewart, W. W	Columbus	Muscogee	1892
Stirling, A. W	Atlanta	Fulton	1896
Stockard, C. C	Atlanta	Fulton	1896
Stone, J. J	Milledgeville	Baldwin	1903
Story, Z. McD	Mistletoe	Columbia	1901
Story, Warren L	Sycamore	Irwin	1897
Stothart, J A	Savannah	Chatham	1902
Stovall, C. T	Vienna	Dooly	1897
Stovall, A. S. J	Elberton	Elbert	1886
Strickland, H. C.	Mayesville	Banks	1900
Strickler, C. W	Atlanta	Fulton	1900
Sullivan, J. S	Macon	Bibb	1893
Summey, Chas. L	Stone Mt.	DeKalb	1897
Swint, R. C	Milledgeville	Baldwin	1902
Tankersley, J. S	Ellijay	Gilmer	1894
Tate, William B. (V.-P.)	Tate	Pickens	1890
Tatum, R. H	Pittsburg	Walker	1902
Taylor, A. P	Thomasville	Thomas	1873
Taylor, R. H. (V. P., S.)	Griffin	Spalding	1879
Taylor, T. J	Dexter	Laurens	1902
Taylor, W. B	Dexter	Laurens	1901
Terrell, Henry W	LaGrange	Troup	1900
Tessier, L. P	Augusta	Richmond	1898
Thomas, J. M	Griffin	Spalding	1894
Thomas, L. J	Dublin	Laurens	1900
Thomas, D. L	Eatonton	Putnam	1900
Thomas, D. A. N	Jersey	Walton	1900
Thomson, Ralph M	Savannah	Chatham	1899
Thompson, P. H	Bluffton	Clay	1886
Thornton H. E	Hartswell	Hart	1903
Thrash, E. C	Oakland	Meriwether	1899
Thrasher, T. H	Ashburn	Worth	1899
Toatle, G. W	Vance	Tattnall	1902
Tood, J. S. (O., C., P.,)	Atlanta	Fulton	1872
Toepel, Theodore	Atlanta	Fulton	1901

Name.	Post-office.	County.	Admitted
Torbit, A. M.	St. Clair	Burke	1901
Toole, John E	Bainbridge	Decatur	1900
Travis, W. D.	Covington	Newton	1893
Trotter, R. W.	Madison	Morgan	1894
Trimble, G. C.	East Point	Fulton	1891
Tucker, W. B	Chipley	Harris	1897
Tucker, C. L	McDonough	Henry	1902
Turk, F. V	Stilesboro	Bartow	1899
Turner, W. J	Ashburn	Dooly	1897
Tuten J. G.	Jesup	Wayne	1903
Tyson, J. D	Adrian	Emanuel	1893
Underwood J. M	LaFayette	Walker	1903
Van Dyke, A. H	Atlanta	Fulton	1903
Van Goidtsnoven, E	Atlanta	Fulton	1887
Van Horne, J. T	Monroe	Walton	1892
Van Marten J. G	Savannah	Chatham	1903
Vickers, T. E.	Harrison	Washington	1899
Visanska, S. A	Atlanta	Fulton	1900
Walker, C. E.	Sycamore	Irwin	1899
Walker, J. L	Waycross	Ware	1892
Wall, J. M	Laurens Hill	Laurens	1900
Wahl, F	Savannah	Chatham	1900
Walton, J. H.	Dublin	Laurens	1898
Ware, Dudley B	Fitzgerald	Irwin	1901
Ware, J. E. H	Kedron	Fayette	1900
Waring, T. P.	Savannah	Chatham	1903
Weaver, J. D.	Eatonton	Putnam	1894
Weaver, J. L.	Baxley	Appling	1890
Weaver, O. H.	Macon	Bibb	1899
Webb, J. F.	Monticello	Jasper	1897
Weddington, J. L.	Dublin	Laurens	1900
Weichselbaum, J	Savannah	Chatham	1903
Wells, James R	Stone Mountain	DeKalb	1900
Westbrook, G. W	Ila	Madison	1898
Westmoreland, W. F. (o., P.)	Atlanta	Fulton	1886
Westmoreland, J. W	Atlanta	Fulton	1897
Welchel, C. C	Comer	Madison	1891
Welchel, John E	Gillsville	Hall	1891
Whelchel, H. C	Dahlonega	Lumpkin	1900
Whaley, Wm. S	Athens	Clarke	1900
Whipple, W. H	Macon	Bibb	1897
White, O. T	Atlanta	Fulton	1902

Name.	Post-office.	County.	Admitted.
White, G. R.	Savannah	Chatham	1902
Whitaker, J. M	Milledgeville	Baldwin	1883
Whitehead, A. G. (V.-P., P.)	Waynesboro	Burke	1861
Wicker, R. H	Rome	Floyd	1901
Wilcox, G. A	Augusta	Richmond	1896
Wiley, R. C	Sparta	Hancock	1897
Wilkin, P. E	Colquitt	Miller	1897
Williams, C. L	Columbus	Muscogee	1903
Williams, W. J	Pembroke	Bryan	1897
Williams, W. P	Blackshear	Pierce	1890
Williams, H. J. (O., C., P.)	Macon	Bibb	1883
Williams, V. G.	Chipley	Harris	1903
Wills, T. J	Washington	Wilkes	1889
Wilmerding, W. E	Atlanta	Fulton	1900
Wilkins, John G	Atlanta	Fulton	1900
Wilson, John Calhoun	Valdosta	Lowndes	1899
Wimberly, Warren W	Adam's Park	Twiggs	1899
Wimberly, John S	Sunlight	Stewart	1891
Winchester, W. R	Macon	Bibb	1883
Wise, B. T	Plains	Sumter	1893
Wood, C. V	Cedartown	Polk	1900
Woods, W. D	Lon	Bulloch	1902
Wolff, Bernard	Atlanta	Fulton	1894
Wooten, Louis O	Unadilla	Dooly	1897
Wright, Thomas R	Augusta	Richmond	1880
Wright, J. E	Macon	Bibb	1899
Youmans, J. R	Stillmore	Emanuel	1901
Youmans, G. E	Adrain	Emanuel	1901
Youmans, L. P	Swainsboro	Emanuel	1901
Young, S. E	Midland,	Muscogee	1903

NON-RESIDENTS.

Buford, O. H	Fort St. Phillip	Louisiana	1891
Gann, Dewell	Benton	Arkansas	1887
Griggs, A. F	Birmingham	Alabama	1899
Hood, J. W	Ocala	Florida	——
Prather, W. B	Seale	Alabama	1894

HONORARY LIST.

This list is designated for aged, retired, or infirm members of the Association, who are entitled to all the privileges of the Association without the payment of dues.

The Secretary would be obliged to members to report any names that should go on this list.

Name.	Post-office.	County.	Admitted.
Bardwell, E. L.	Talbotton	Talbot	1872
Bell, A. A	Madison	Morgan	1858
Brantly, F. M.	Senoia	Coweta	1849
Calhoun, F. R. (v.-p.)	Cartersville	Bartow	1873
Colding, C. H.	Savannah	Chatham	1882
Coleman, J. T.	Perry	Houston	1851
Dudley, M. J.	Sonoraville	Gordon	1880
Gaston, J. McF.	Atlanta	Fulton	1884
Hopkins, T. S	Thomasville	Thomas	1865
Hoyt, W. D.	Rome	Floyd	1872
Jones, W. L.	Atlanta	Fulton	1849
McDonald, C. M.	Leesburg	Lee	1892
Philpot, W. H.	Talbotton	Talbot	1857
Read, J. B.	Savannah	Chatham	1851
Smith, C. D.	Atlanta	Fulton	1894
Smith, J. B.	Perry	Houston	1871

IN MEMORIAM.

☞ SPECIAL REQUEST TO EVERY MEMBER.—The Secretary *earnestly requests each member of the Association* to aid him in *filling* THE BLANKS in the following Roll of Deceased Members *by making the necessary inquiries* in their respective cities and counties, *and writing him at once*, on obtaining the desired information.

Name.	Post-office.	County.	Admitted.	Died.
Adams, C. B.	Augusta	Richmond	1868	1875
Aiken, W. F.	Savannah	Chatham	1895	1900
Alexander, J. R.	Cave Springs	Floyd	1849	
Alexander, L. B.	Forsyth	Monroe	1877	1891
Alexander, J. F. (P., C., V.-P.)	Atlanta	Fulton	1849	1901
Alfriend, E. W. (V.-P.)	Albany	Dougherty	1852	1886
Armstrong, W. S.	Atlanta	Fulton	1886	1896
Arnold, R. D. (V.-P., P.)	Savannah	Chatham	1849	1876
Ashworth, A. B. (S.)	Atlanta	Fulton	1887	1889
Avary, J. C.	Decatur	DeKalb	1859	1873
Baker, A. H.	Augusta	Richmond	1876	1891
Ballinger, M. R.	Floyd Springs	Floyd	1860	1886
Banks, J. T. (V.-P., P.)	Griffin	Spalding	1858	1880
Barker, A. H.	Augusta	Richmond	1876	1891
Barkwell, T. J	Hawkinsville	Pulaski	1859	
Barnett, J. W.	Raytown	Taliaferro	1880	1890
Battey, Robert (C., P.)	Rome	Floyd	1859	1895
Battle, H. L.	Russellville	Monroe	1849	
Beasley, J. A.	West Point	Troup	1849	1897
Bell, T. W.	Busbyville	Houston	1853	
Bignon, H. A.	Augusta	Richmond	1852	1870
Billings, S. A.	Columbus	Muscogee	1855	1872
Bizzell, W. D. (V.-P.)	Atlanta	Fulton	1882	1890
Black, R. C. (T.)	Augusta	Richmond	1852	1860
Bomar, B. F.	Atlanta	Fulton	1859	
Borcheim, L. E.	Atlanta	Fulton	1886	1887
Boswell, S. J. (V.-P.)	Columbus	Muscogee	1855	
Bosworth, Don. B.	Atlanta	Fulton	1894	1898
Bothwell, D. J.	Vienna	Dooly	1849	

Name.	Post-office.	County	Admitted	Died.
Bozeman, J. F.	Atlanta	Fulton	1555	1877
Boring, John M. (V.-P)	Atlanta	Fulton	1856	1891
Boyd, Montague L.	Savannah	Chatham	1889	1897
Boyd, A. F.	Savannah	Chatham	1891	1901
Brandon, D. S.	Thomasville	Thomas	1873	1878
Brantley, S. D.	Sandersville	Wash'gton	1849	1897
Brawner, W. M.	Lexington	Oglethorpe	1883	1861
Broadhurst, W. W.	Augusta	Richmond	1852	1861
Brooks, C. A.	Americus	Sumter	1888	1894
Brown, S. E.	Eatonton	Putnam	1890	1896
Bruce, R. J.	Thomasville	Thomas	1874	1878
Bunn, William	Wilna	Houston	1854	
Burgess, Wm. R. (T., O.)	Macon	Bibb	1870	1878
Burney, S. W. (P)				1876
Burruss, L. K	Carnesville	Franklin	1893	1901
Campbell, Robert	Augusta	Richmond	1849	1885
Callaway Enoch	LaGrange	Troup	1895	1901
Carroll, J. C.	Laurens Hill	Laurens	1857	1870
Carroll, R. C.	Augusta	Richmond	1873	1882
Carter, C. J.	Lake Park	Lowndes	1889	1893
Castlen, F. G.	Macon	Bibb	1867	1874
Carlton, J. M.	Athens	Clarke	1882	1883
Cason, E. A.	LaGrange	Troup	1897	1897
Charlton, T. J. (C)	Savannah	Chatham	1862	1886
Charters, W. M. (P)	Savannah	Chatham	1851	1883
Chase, D. S.	Augusta	Richmond	1862	
Cickey, D. C.	Macon	Bibb	1894	1896
Clark, B. J	Barnesville	Pike	1896	1898
Clark, S. B	Rich Factory	Richmond	1852	
Campbell, H. F. (O., V.-P., P.)	Augusta	Richmond	1851	1892
Coe, J. N.	Flat Rock	Pike	1856	
Colding, C. H.	Savannah	Chatham	1882	1894
Coleman, John S	Augusta	Richmond	1891	1892
Colley, F. S. (P.)	Monroe	Walton	1856	
Cooper, G. F. (O., S., V.-P)	Americus	Sumter	1849	1882
Copeland, A. B	Hamilton	Harris	1878	1882
Cornwall, G. H	Hillsboro	Jasper	1854	
Cortelyou, P. R.	Marietta	Cobb	1887	1902
Coursey, W. D.	Vidalia	Montgomery	1894	1898
Crawford, S. S	Augusta	Richmond	1857	
Crump, E. D.	Herndon	Burke	1872	1881
Cumming. H. M	Augusta	Richmond	1862	1887
Cunningham, L S	Big Creek	Forsyth	1859	1862

Name.	Post-office.	County.	Admitted.	Died.
Cunningham, W D	Jasper	Pickens	1859	1866
D'Alvigney, N	Atlanta	Fulton		1877
Davenport, C. W	Point Peter	Oglethorpe	1852	
Davenport, H. S	Calhoun	Gordon	1859	
Davis, W. L	Albany	Dougherty	1849	
Deadwyler, M. P. (V.-P.)	Elberton	Elbert	1868	1895
Dean, S H	Conyers	Rockdale	1856	
Dearing, W. E	Augusta	Richmond	1852	1867
DeCortez, C. A	Savannah	Chatham	1872	
Dickinson, J. T	Albany	Dougherty	1857	
Dickinson, R. Q. (V.-P., P.)	Albany	Dougherty	1850	
Divine, K. C	Atlanta	Fulton	1882	1899
Dobbins, W. O	Fort Gaines	Clay	1883	1890
Dostor, B. R.	Blakely	Early	1873	1903
Dostor, B. R. Jr	Blakely	Early	1896	1899
Doughty, Henry Campbell	Augusta	Richmond	1896	1899
Dugas, L. A. (P)	Augusta	Richmond	1852	1884
Duncan, Wm	Savannah	Chatham	1868	1900
Dupree, L. J	Camilla	Mitchell		1890
Engram, R. O	Montezuma	Macon	1881	1893
Eve, Joseph A.	Augusta	Richmond	1852	1886
Eve, S. C	Augusta	Richmond	1868	1854
Felder, W. L	Augusta	Richmond	1857	1867
Fish, J. D. (T.)	Savannah	Chatham	1875	1879
Fitzgerald, E	Macon	Bibb	1882	1885
Ford, L. D. (T.)	Augusta	Richmond	1849	1884
Fort, Moses T	Hawkinsville	Pulaski	1859	1878
Foster, Eugene	Augusta	Richmond	1875	1903
Freeman, S. H	Dacula	Gwinnett	1891	1897
Franklin, M. A	Macon	Bibb	1849	1858
Frazier, W. M	Hawkinsville	Pulaski	1850	
Gaither, Henry	Oxford	Newton	1851	1890
Gaither, B T	Oxford	Newton	1852	1853
Gardner, J. W	Augusta	Richmond	1857	
Gerdine, John	Athens	Clarke	1882	1903
Gilmer, Wm. B	Macon	Bibb	1893	1899
Girardy, Edward	Augusta	Richmond	1852	1859
Gordon, J. M	Savannah	Chatham	1849	
Gray, Jas. A. (S.)	Atlanta	Fulton	1882	1887
Gray, S. H	Barnesville	Pike	1871	1885
Green, A. B	Pond Town	Sumter	1849	
Green, H. K	Macon	Bibb	1849	1867

Name.	Post-office.	County.	Admitted.	Died.
Green, Thomas F.	Milledgeville	Baldwin	1849	1879
Gregory, J. D.		Sumter	1849	
Griffin, C. F.	Cassville	Bartow	1888	1893
Griggs, A. W. (o.,v.-p.,c.,p.)	West Point	Troup	1866	1900
Griggs, R. E.	Columbus	Muscogee	1892	1897
Grimes, T. W.	Columbus	Muscogee	1855	1882
Habersham, J. C.	Savannah	Chatham	1853	
Habersham, J. C. Jr. (v.-p.)	Savannah	Chatham	1866	1881
Habersham, S. E.	Eatonton	Putnam	1870	
Hagan, Hugh	Atlanta	Fulton	1892	1898
Hallum, J. W.	Carrollton	Carroll	1891	1895
Hammond, D. W. (v.-p., c.)	Macon	Bibb	1857	1887
Harden, W. P.	Harmony Grove	Jackson	1852	1885
Harrell, W. J.	Bainbridge	Decatur	1874	1881
Harris, S. N. (v.-p.)	Savannah	Chatham	1851	1854
Harris, N. O.	Atlanta	Fulton	1887	1896
Harris, Juriah (o.,v.-p.)	Savannah	Chatham	1852	1876
Harrison, Gabriel	Macon	Bibb		1862
Hart, A. C.	Waynesboro	Burke	1852	
Hatch, Milo G. (c.)	Tennille	Washingt'n	1883	1897
Hatchett, J. M.	Fort Gaines	Clay	1892	1892
Havis, M. W.	Perry	Houston	1854	1890
Hawes, E. C.	Appling	Columbia	1852	
Hawkins, A. M. F.	Ball Ground	Cherokee	1891	1903
Hawkins, S. B.	Americus	Sumter	1871	1892
Heard, T. O.	Griffin,	Spalding	1867	
Hendrick, J. B.	Covington	Newton	1857	1881
Henry, G. C.	West Point	Troup	1872	
Hollis, T. B.	Bolingbroke	Monroe	1897	1901
Holt, W. F.	Macon	Bibb	1867	1901
Hook, E. B.	Augusta	Richmond	1857	1862
Houston, J. P. R.	Savannah	Chatham	1873	1892
Howell, Dan H. (s.)	Atlanta	Fulton	1878	1899
Hoxey, Thomas	Columbus	Muscogee	1849	1853
Hollingsworth, W. T.	Madison	Morgan	1857	1893
Holmes, G. W. (v.-p., p., c.)	Rome	Floyd	1867	1890
Holmes, T. M. (o.)	Rome	Floyd	1883	1891
Hamilton, J. L.	Stone Mountain	DeKalb	1859	1890
Hunter, E. H. W.	Louisville	Jefferson	1867	1883
Ingraham, E. P.	Albany	Dougherty	1870	1873
Irvin, Robert	Augusta	Richmond	1880	1881
Johnson, C. W.	Macon	Bibb	1870	1875

Name.	Post-office.	County.	Admitted.	Died.
Johnson, John M	Atlanta	Fulton	1866	1886
Joiner, W. W	Hawkinsville	Pulaski	1897	1900
Jones, B. O	Atlanta	Fulton		
Jones, J. W	Atlanta	Fulton	1857	1871
Jowers, Clebe	Americus	Sumter	1897	1897
Kennedy, L. P	Atlanta	Fulton	1890	1892
Kennebrew, Henry	Athens	Clarke	1883	1886
Kirkscey, E. J. (V.-P.)	Columbus	Muscogee	1871	1877
Kollock, P. M. (P.)	Savannah	Chatham	1852	1872
Lamar, T. R. (V.-P.)	Macon	Bibb	1849	1859
Lockhart, R. H	Columbus	Muscogee	1855	1859
Lanier, S. J	Mt. Airy	Habersham	1890	1902
Lattimer, C. T	Macon	Bibb	1889	1889
Lawrence, L. L	Blountsville	Jones	1889	1890
Le Conte, Jos	Berkely	California	1849	1901
Leitner, C. B	Columbus	Muscogee	1852	1897
Lightfoot, W. S	Macon	Bibb	1849	1864
Long, Crawford W	Athens	Clarke	1849	1878
Logan, J. P. (P.)	Atlanta	Fulton	1858	1891
Love, Wm. Abram (V.-P.)	Atlanta	Fulton	1866	1898
Lumpkin, George	Maxey's Depot	Oglethorpe	1859	
Lumpkin, S. P	Watkinsville	Clarke	1859	
Mackie, J. D	Augusta	Richmond	1852	1854
Maddox, W. D	Monticello	Jasper	1849	
Maffit, R. G. W	Dalton	Whitfield	1859	
Martin, J. D	Savannah	Chatham	1894	1898
Matthews, S. M	Quitman	Brooks	1900	1901
Matthews, W. B	Fort Valley	Houston	1884	1885
McBride, W. G	Oconee	Washingt'n	1850	1873
McDowell, J. M	Barnesville	Pike	1887	1891
McGolrick, R	Macon	Bibb	1849	1853
McKinley, C. A	Newnan	Coweta	1859	
McMillen, J. E	Columbus	Muscogee	1872	1883
Means, A. (V.-P.)	Oxford	Newton	1851	1883
Means, O. S	Oxford	Newton	1857	
Means, W. A	Hendrix	Upson	1899	1900
Meniere, Wm. S	Madison	Morgan	1857	
Milam, R. J	Fairburn	Campbell	1882	1882
Miller, H. V. M	Atlanta	Fulton	1851	1896
Morrison, D. H	Savannah	Chatham	1868	1869
Mulligan, G. W. (V.-P., P.)	Washington	Wilkes	1883	1897
Musgrove, W. C. (C., S.)	Midville	Burke	1849	1876

Name.	Post-office.	County.	Admitted.	Died.
Nash, R. A.	Marion	Twiggs,	1849	
Nesbit, D. B.	Eatonton	Putnam	1894	1900
Nisbet, R. H	Eatonton	Putnam	1854	1873
Noell, S. G	Ypsilanti	Talbot	1892	1892
Nottingham, C. B. (S., T., C., P.)	Macon	Bibb	1849	1875
Nunn, R. M	Savannah	Chatham	1871	1873
O'Daniel, William (T., P.)	Bullard	Twiggs	1870	1900
Ogilby, H. J. (V.-P.)	Madison	Morgan	1849	1873
O'Keefe, D. C. (S.)	Atlanta	Fulton	1852	1871
Orme, L. H. (S.)	Atlanta	Fulton	1866	1872
Owen, J. D		Baldwin	1850	
O'Sullivan, ——	Cork	Lee	1849	
Parsons, J. M	Russellville	Monroe		
Perdue H	Barnesville	Pike	1889	1896
Pitts, G. W	Star	Butts	1859	
Pittman, S. S	Chipley	Harris	1900	1900
Poore, J. J	Monroe	Walton	1894	1896
Posey, J. F	Savannah	Chatham	1851	
Powell, T. S. (V.-P.)	Atlanta	Fulton	1857	1896
Pringle, W	Covington	Newton		
Quarterman, K. A	Walthourville	Liberty	1885	
Ragan, Isham H	Palmyra	Lee	1856	
Raines, Thomas	Atlanta	Fulton	1872	1883
Raines, T. L	Atlanta	Fulton	1882	1884
Rauschenberg, Christian	Atlanta	Fulton	1831	1878
Richardson, C. P	Savannah	Chatham	1851	1853
Ridley, R. A. T. (V.-P.)	LaGrange	Troup	1859	1871
Robertson, J. J	Washington	Wilkes	1852	1872
Robinson, G. P	Atlanta	Fulton	1899	1902
Roddy, R. L. (V.-P.)	Forsyth	Monroe	1849	1878
Roy, G. G	Atlanta	Fulton	1878	1901
Rudisill, B. F	Forsyth	Monroe	1887	1901
Ruffin, W. R	Augusta	Richmond	1852	
Russell, W. J	Lawrenceville	Gwinnette	1861	
Ryan, T. D. L	Hawkinsville	Pulaski	1859	1876
Stafford, S. J	Madison	Morgan	1856	1859
Searcy, D. B	Bolingbroke	Monroe	1849	1885
Shropshire, J. W			1871	
Simmons, J. N	Atlanta	Fulton	1850	1871
Simmons, J. S	Gainesville	Hall	1873	1881
Simmons, S. B	Augusta	Richmond	1852	1867

Name.	Post-office.	County.	Admitted.	Died.
Simmons, T. A	Irwinton	Wilkinson	1871	1871
Slaughter, J. T	Villa Rica		1851	1889
Smith, A. D	Montezuma	Macon	1871	
Smith, C. W.	Jonesboro	Clayton	1859	
Smith, Hiram	Augusta	Richmond	1876	1888
Smith, H. H	Augusta	Richmond	1886	1887
Smith, R. M. (c.)	Athens	Clarke		1879
Smith, Thomas	Savannah	Chatham	1858	1876
Spier, W. A	Grantville	Coweta	1859	
Stallings, J. D	Preston	Webster	1871	
Stanford, F. A	Columbus	Muscogee	1849	1885
Starr, E P	Savannah	Chatham	1868	1873
Steele, H	Knoxville	Crawford	1849	
Steele, R. T	Fairburn	Campbell	1849	
Steiner, H. H	Augusta	Richmond	1857	1892
Stephens, W. B	Forsyth	Monroe	1849	
Sterling, W. L	Atlanta	Fulton	1878	1894
Stewardson, Thomas	Savannah	Chatham	1849	
Stone, Geo. H	Savannah	Chatham	1875	1899
Stovall, G. M	Elberton	Elbert	1894	1894
Stozier, L. L	Albany	Dougherty	1867	
Strother, W. A	Albany	Dougherty	1867	1896
Sutton, C. B		Lee	1856	
Taliaferro, V. H. (v.-p)	Atlanta	Fulton	1857	1887
Taylor, E. T.	Columbus	Muscogee	1855	
Taylor, J. P	Haralson	Coweta	1859	1897
Taylor, R. N	Hawkinsville	Pulaski	1850	
Thomas, J. G. (v.-p., p., c., t.)	Savannah	Chatham	1867	1885
Thompson, Chas	Macon	Bibb	1849	1854
Thompson, Wm. L	Pitts	Wilcox	1897	1898
Trammell, A. A	Forsyth	Monroe	1856	
Tucker, O. W	Brunswick	Glynn	1890	1891
Underwood, J. B	Cave Spring	Floyd	1860	1881
Van Meter, J. N	Euharlee	Bartow	1879	1881
Wall, C. D	Columbus	Muscogee	1899	1900
Wall, W. W	Calhoun	Gordon	1860	
Walker, T. F	Cochran	Pulaski	1858	1888
Walker, F.	Macon	Bibb	1889	1898
Ware, A. E. O.			1859	
Waring, J. J.	Savannah	Chatham	1853	1888
Watson, W. A	Jefferson	Jackson	1883	1889

Name.	Post-office.	County.	Admitted.	Died.
Watson, G. B.	Acree	Worth	1897	1899
Wells, C. H	Savannah	Chatham	1853	1854
Wells, W. B.	Chattanooga	Tennessee	1873	1891
Wells, Charles (P.)	Perry	Houston	1849	
West, C. W	Savannah	Chatham	1853	1859
West, J. N.	Toccoa	Hab'rsh'm	1901	1903
Westmoreland, W. F. (P.)	Atlanta	Fulton	1856	1890
Wethington, R. T.	Thomasville	Thomas	1884	1887
White, S. G. (V.-P.)	Milledgeville	Baldwin	1868	1877
Whitlock, Isaac W.	Washington	Wilkes	1852	1853
Wile, Henry	Atlanta	Fulton	1886	1887
Wiley, J. B	Macon	Bibb	1849	
Williams, T. L.		Dooly	1849	
Williams, W. L	Fayetteville	Fayette	1873	
Willingham, Willis	Lexington	Oglethorpe	1849	1872
Winchester, E. A	DeSoto	Sumter	1893	1897
Winn, G. A	Bolingbroke	Monroe	1849	1862
Wirsen, G. F	Rutledge	Morgan	1871	1884
Woodson, C. T	Wilna	Houston	1854	
Wooten, W. H	Lexington	Oglethorpe	1852	1860
Word, T. J	Rome	Floyd	1887	1890
Word, R. C	Atlanta	Fulton	1855	1890
Wragg, J. A	Savannah	Chatham	1853	
Wright, P. H	Macon	Bibb	1869	1888
Yearwood, J. K	San Lui Potosi	Mexico	1901	1902
Yonge, Easton	Savannah	Chatham	1880	

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